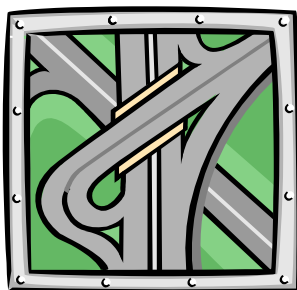




A GUIDE FOR THE DEVELOPMENT OF PLAN SHEETS

DEVELOPED BY REGION TWO - PRECONSTRUCTION

January 7, 2004



GENERAL PLAN SHEET REQUIREMENTS

DRAWING IN SHEET FILES VS. DESIGN FILES

CADD files can be divided into two general types of files, design files and sheet files. Understanding the difference between these two types of files, and what belongs in each type of file, is crucial to producing project plan sets that meet UDOT standards.

Design files contain design line work and detailed drawings (for example, PIN_Design, PIN_Striping, PIN_Typical). Design files should never contain callouts.

Sheet files, on the other hand reference one or more design files (including a border file) and contain only callouts and labeling for a specific type of work. Design line work and details should never be done directly inside of a sheet file.

The only exceptions to these rules are detail sheets and typical sections. For these types of drawings, all notes and labeling are done inside of the design file. See “Typical Sections” and “Detail Sheets” for more discussion.

GENERATING PLAN SHEETS

The first step in creating plan sheets is to cut sheets. Cutting sheets means creating individual MicroStation drawings that follow an alignment at a specific scale and consistent interval.

For small projects with only one or two plan sheets, cutting sheets can be done by hand. However, for large projects, the best way to cut sheets is to use the “Plan & Profile Generator” tool in Inroads. This tool automatically generates plan sheets. It will create the scaled sheet view, create match lines, reference files, clip boundaries, and even include the north arrow.

It is easy to use the “Plan and Profile Generator” because preference files have

been set up for various standard scales.

REFERENCE FILES

When referencing files into sheets, remember the following general guidelines:

- ❑ The “Save Full Path” should be toggled off.

Toggling this option on will create significant problems later when the project is saved to a new location (i.e., when it is burned to a CD, sent to the electronic plan room for advertising, or archived) because it will save the full file name (including drive letter). If the new location has a different letter (and it usually will), the reference files will not be found.

- ❑ Use correct logical names. Iplot decision to grayscales a drawing is based on the logical name.
- ❑ Attach the file coincidently. Simply put, this means that reference files **should not be moved** to a different location **or scaled**. Moving and scaling should be done in the sheet file by moving and scaling the border as necessary. If the file is attached coincidently, features in the sheet files can correctly be measured and tracked.

There are a few exceptions to this rule. For example detail sheets with multiple attachments or sheets that combine plan and profile views. For plan and profile sheets, the recommended approach is to attach the plan view coincidently and then move the profile view into the right location by attaching it as a saved view.

GENERAL DRAFTING STANDARDS

- ❑ Use standard text sizes for the drawing scale. Use small text for all callouts and notes & medium text for detail titles.

Using standard text sizes maintains a consistent “look” throughout the plan set.

- ❑ Organize callouts in groups based on whether they are left or right of the alignment.
- ❑ General notes go in the upper left corner of the sheet.
- ❑ North arrow goes in the upper right corner.
- ❑ Title blocks: The title block is actually a cell containing a series of data fields. DO attach the cell and use the data fields to enter the text. DO NOT enter the text by using the “Place Text” tool.

Using the title block cell insures that the title blocks for all sheets look the same (font, text size, weight, etc.).

DRAFTING STANDARDS FOR ARROWS

All arrows for text labeling should be drawn with a filled arrow terminator with a width of 1.0 times the active text size and a height of 0.5 times the active text size.

Width is measured from head to tail of the arrow.

There are several ways to label in Microstation. Here are a few options.

- ❑ Use the “Place Leader & Text” tool from the “Drafting Tools” toolbar in Microstation. When using this method, set the arrow properties in “Leaders” section of the “Define Properties” toolbar by setting the width to 1.0 and the height to 0.5.

- ❑ Use the ‘Place Note’ tool on the “Place Text” toolbar in Microstation. When using this method, arrow sizes are controlled in the “Terminators” section of the “Dimension Settings” dialog box by setting the width to 1.0 and the height to 0.5. When using this method, be sure the dimension text is set up to use the active text properties and is not overridden in the “Dimensions Settings” dialog box.
- ❑ Use the text tool and create the leader by drawing lines using a “Dimension” line style. When using this method, change the scale of the line style to approximate the required arrow size. Width to length ratio is controlled automatically by the line style settings.

GENERAL RULES FOR CALLOUTS

- ❑ Callouts need to match the pay item exactly, word for word and should include the word “Req’d”.
- ❑ Group callouts under one heading, depending on whether they are left or right of the control line. The callout heading is underlined and in a heavier line weight.

NOTES:

- ① ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.
- ② SEE LANDSCAPE SHEETS FOR FINAL TREATMENT OF PARK STRIP AREAS.

WT = 1
TX = S

WT = 2
TX = S

THE PROJECT FLAG IS ACTUALLY A CELL CONTAINING A SERIES OF DATA FIELDS. THE CELL MAY BE ACQUIRED FROM THE UDOT STANDARD CELL FILE. ATTACH THE CELL AND USE THE DATA FIELDS TO ENTER THE TEXT. DO NOT ENTER THE TEXT BY USING THE "PLACE TEXT" TOOL.

STP-0068(24)43
BEG. PROJECT
STA. 118+80.42
N. 37,228.13
E. 49,932.06

**FLAGS SHOULD INCLUDE: PROJECT
NUMBER AND STATION &
COORDINATES (NORTHING, EASTING,
WHERE THE PROJECT BEGINS/ENDS.**

CONCRETE CURB AND GUTTER

STA 119+30.42, 43.50 LT TO
MATCH LINE STA 123+00.00, 43.50 LT

CONCRETE SIDEWALK REQ'D

STA 119+30.42, 52.00 LT
MATCH LINE STA 123+00 00 52.00 LT

~~CONCRETE DRIVEWAY~~

☉ STA 120+03.12, LT 15.0' WIDE
12.4 X 14.2 APPROACH WITH
6" GRAVEL BED

CONCRETE CURB TYPE B5 REQ'D

REDWOOD ROAD
STA 121+12.42, 5.75 LT TO
MATCH LINE STA 123+00.00, 5.75 LT

WHERE TWO OR MORE ALIGNMENTS COME TOGETHER ON A SHEET, ORGANIZE THE CALLOUTS IN THE FOLLOWING FORMAT:

BID ITEM

**ALIGNMENT 1
STATION, OFFSET TO
STATION, OFFSET**

**ALIGNMENT 2
STATION, OFFSET TO
STATION, OFFSET**

NORTH ARROW GOES IN THE UPPER RIGHT CORNER OF THE SHEET. (PREFERRED)

LEGEND:
WT = WEIGHT
TX = TEXT SIZE
S = SMALL
M = MEDIUM
L = LARGE
XL = EXTRA LARGE

**REFERENCE THE ALIGNMENT
AND STATION FROM THE DESIGN FILE**

**ALL ARROWS FOR TEXT LABELING SHOULD
BE DRAWN WITH A FILLED ARROW TERMINATOR.**

ARROWHEAD GEOMETRY
WIDTH = 1 1/2 TEXT HEIGHT
HEIGHT = 3/4 TEXT HEIGHT

**THE WIDTH OF THE
ARROWHEAD IS
MEASURED FROM
HEAD TO TAIL OF
THE ARROW.**

**ONLY CALLOUTS SHOULD BE PLACED IN SHEET FILES.
ALL LINE WORK AND CELLS SHOULD BE PLACED IN A SEPARATE
DESIGN FILE AND REFERENCED INTO THE SHEET FILE.**

CALLOUT COLOR LEGEND
BLUE = CALLOUT HEADING
= STANDARD CALLOUT COLOR
CALLOUT NEEDS REVISIONS.
CHANGE TO GREEN WHEN REVISED.

**USE WEIGHT 1 FOR STATIONING
CALLOUTS.**

**ONE TEXT HEIGHT SPACE.
(PREFERRED)**

COLOR: RED CALLOUTS REQUIRE REVISIONS. CHANGE BACK TO GREEN WHEN CORRECT.

**CONCRETE DRIVEWAY
LAPPED 6 INCH THICK RFO'D**

± STA 120+93.30. RT 15.5' WIDE
SEE DETAIL SHEET DT-?? FOR APPROACH
WITH 4" HMA - DRIVEWAYS 1/2 INCH REQ'D
± STA 121+52.76. RT 13.6' WIDE
SEE DETAIL SHEET DT-?? FOR APPROACH

ASPHALT CONCRETE DRIVEWAY REQ'D

TA 119+22.95, RT 15.0' WIDE
SEE DETAIL SHEET DT-?? FOR
APPROACH

CONCRETE CURB TYPE B4 REQ'D

STA 120+85.55	52.00 RT	TO
STA 120+86.20	52.00 RT	TO
STA 121+01.05	52.00 RT	TO
STA 121+11.39	84.58 RT	TO
STA 121+31.98	96.50 RT	TO
STA 121+34.68	95.66 RT	TO
STA 121+46.71	83.59 RT	TO
STA 121+45.36	52.00 RT	TO
STA 121+59.56	52.00 RT	TO
STA 121+61.44	98.10 RT	TO
STA 122+64.51	52.00 RT	TO
STA 122+64.54	59.60 RT	TO
STA 122+85.51	52.00 RT	TO
STA 122+85.44	59.60 RT	TO

COLOR: CALLOUTS ARE GREEN

BLUETOOTH 121+12.42 C

CONCRETE ROLLED GUTTER REQ'D

TA 120+95.28, 112.43 RT

FILL IN APPROPRIATE COUNTY.

NUMBER PAGES ACCORDINGLY.
(i.e. DT-01, RD-01, ETC.)

UTAH DEPARTMENT OF TRANSPORTATION

PROJECT NAME

PROJECT DESCRIPTION
GENERAL PLAN SHEETS

SALT LAKE
COUNTY

SHEET NO. _____

DATE	REV. BY	CORR. BY	ARTICLES AFFECTED	IN. DOL. J.	REMARKS
ORIGINAL SUBMISSION FOR AUTHORIZATION					

DATE	CHECK	NO.
------	-------	-----

APPROVED _____ DATE _____ PROJECT DESIGN ENGINEER _____

PROJECT NUMBER

SHEET 1'S

DESCRIPTION

Sheet 1's include the following sheets in this order:

- ❑ Title Sheet
- ❑ Index to Plans (if not on Title Sheet).
- ❑ Standard Drawing Index Sheets
- ❑ Cross Reference Sheet/Sheet Location Map
- ❑ Storm Water Pollution Prevention Plan
- ❑ Survey Control Sheet

All of these sheets is REQUIRED for every project. Additional sheets can be added to the Sheet 1's on a project specific basis.

TITLE SHEET

- ❑ Location map with north arrow (Utah map in the upper left corner, vicinity map in the center of page).
- ❑ Project number, name, description, funding source, location, and county. This must match PPMS **EXACTLY**.
- ❑ Length in miles.
- ❑ Flags showing beginning and ending station, project number, and milepost.
- ❑ Equation flags.
- ❑ Region director signature block.

INDEX TO PLANS

If the index is too large to fit conveniently on the title sheet, then it should be put on a separate sheet numbered 1-A.

- ❑ Index to Roadway plans.
- ❑ Index to Structure Drawings.

INDEX TO STANDARD DRAWINGS

This sheet must be downloaded from the shared drive or the UDOT website. The most important thing is to make sure that the most current version is downloaded. Furthermore, this must be checked

periodically as it changes from time to time as Standards are revised.

This sheet doesn't need to be filled out until PS&E and does not require the designer to fill in the signature blocks.

STORM WATER POLLUTION PREVENTION PLAN

Fill in project specific pollution prevention plan. This sheet is only required for projects over a certain area. Check with the Region Hydraulics Engineer for specifics.

CROSS REFERENCE SHEET/ SHEET LOCATION MAP

For larger and more complex projects, the plans become quite involved and voluminous. Locating the sheet or group of sheets showing a particular line or detail may be difficult. The purpose of this sheet is to help solve this problem.

- ❑ Show beginning and ending project flags.
- ❑ Avoid clutter by showing just enough of the proposed design and the existing topography to see the overall project.
- ❑ Use proper logical names for the existing topography file for grey scaling.
- ❑ Show **all** alignments with **readable** stationing. Because the scale of this sheet is significantly different from the roadway plans, the stationing from the design file will be too small to read. Stationing annotation to fit the scale of the Cross Reference Sheet will have to be done inside of this sheet.
- ❑ Show sheet cut boundaries with the appropriate sheet number.
- ❑ Label all structures.
- ❑ Show a north arrow.

SURVEY CONTROL SHEET

For small projects, survey control should be displayed on the cross-reference sheet. For large projects with significant right-of-way, a separate sheet should be used to clearly show existing monuments and section/quarter section lines.

- ❑ Show the existing topography but turn off levels as needed to avoid clutter.
- ❑ Show and label all control points on the map.
- ❑ Use correct cells to display control points, monuments, and section corner/quarter section corners.
- ❑ Provide a table listing northing, easting, elevation, and a description of all control points in project coordinates. In some cases, control must also be provided in latitude and longitude. Check with the Region Two Right-of-Way manager to find out if this is required for the project.
- ❑ Display a grid showing section and quarter section lines. Label all bearings on this grid. **IMPORTANT:** Clearly indicate on the map any monuments that were calculated because they could not be physically located in the field.
- ❑ Show a north arrow.

TX~LARGE TITLE
WT=3

UTAH

DEPARTMENT OF TRANSPORTATION

TX~S, WT=1

U.S. Standard Units (Inch - Pound Units)
SEE SHEET 1A FOR INDEX TO SHEETS

SHEET
NO.
1

TX~TITLES
WT=3

PLANS OF PROPOSED STATE ROAD

SHOW LEADER ARROW AND PROJECT
NUMBER TO LOCATION ON STATE MAP.

SP-0068-(24)43

SP-0068(24)43

REDWOOD ROAD: 11800 SOUTH TO 10600 SOUTH

GRADING, SURFACING, DRAINAGE, STRUCTURE, SIGNING, & SIGNALIZATION

SALT LAKE COUNTY

LENGTH 1.483 MILES R.P. 43.576 TO R.P. 45.059

TX~XL
WT=2

CALL OUT PROJECT NUMBER DESCRIPTION, NAME,
FUNDING SOURCE, LOCATION, COUNTY, LENGTH OF
PROJECT IN MILES AND THE REFERENCE POINTS
(MUST MATCH PPMs EXACTLY)
LENGTH IN MILES AND REFERENCE
POINTS TO 3 DECIMAL PLACES

USE FANCY TEXT FONT FOR
TITLE DESCRIPTION AND
PROJECT INFORMATION

SHOW NORTH ARROW (CELL)
AND USE PROPER SCALE

TX~M, WT=2

STA. 197+13.06
END PROJECT
SP-0068(24)43

R.P. 45.059

STA. 118+80.42
BEG. PROJECT
SP-0068(24)43

R.P. 43.576

MAKE SURE YEAR IS CORRECT ON REGION
DIRECTOR APPROVAL SIGNATURE BOX.

UTAH DEPARTMENT OF TRANSPORTATION
APPROVED _____ 2003

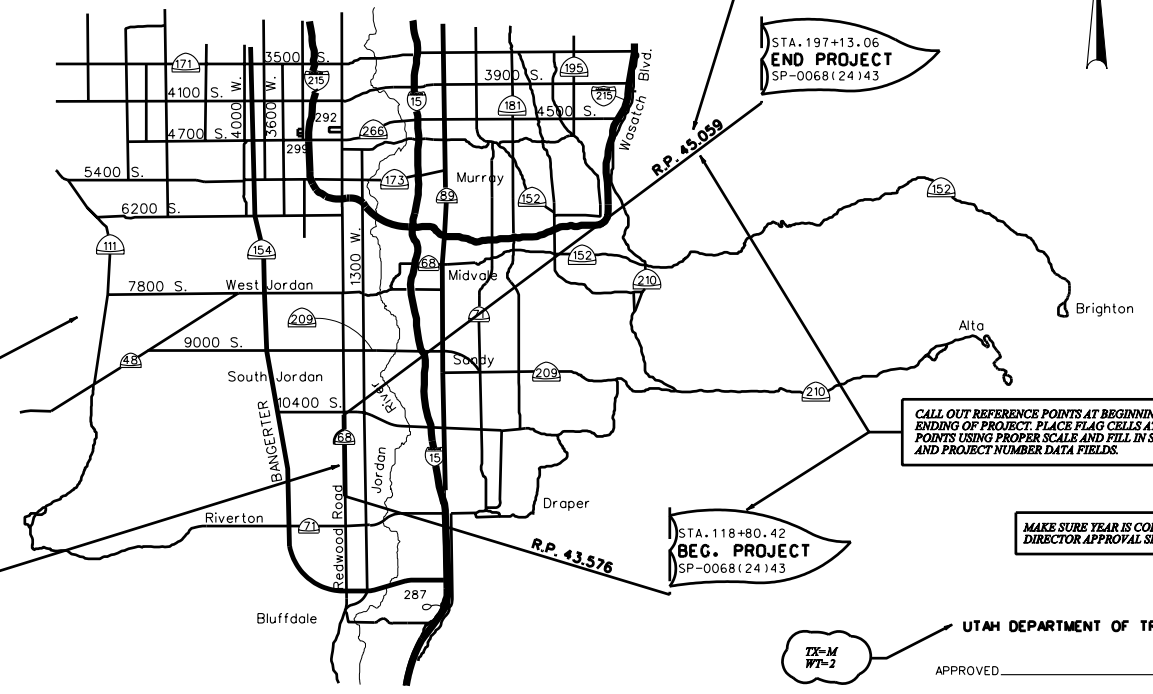
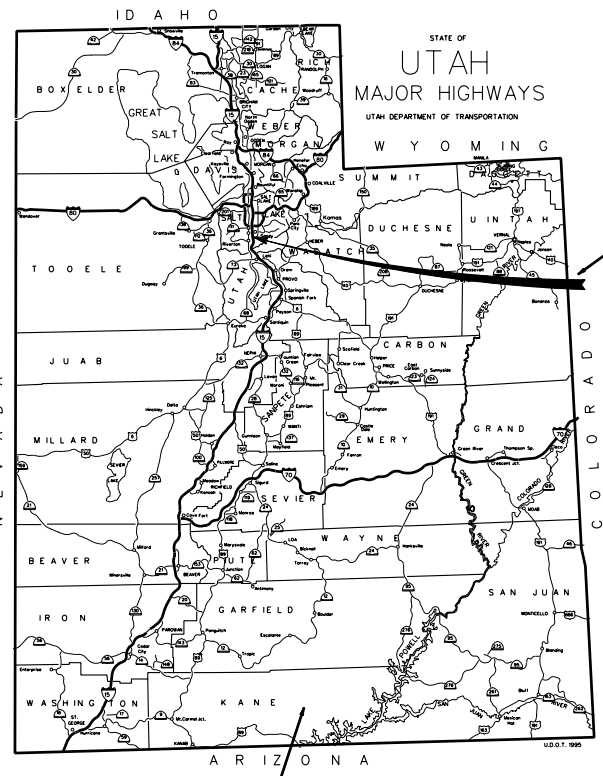
REGION TWO DIRECTOR

TX~S
WT=1

SHOW VICINTY MAP OF THE AREA
FOR DESIGN & CONSTRUCTION
(ENLARGE PROJECT AREA)

PROJECT AREA/ROUTE
WT=3

SHOW UTAH MAP IN
UPPER LEFT CORNER



INDEX TO SHEETS

SHOW SHEET NUMBER, NUMBER OF SHEETS AND DESCRIPTION IN THE ROADWAY TABLE

USE WEIGHT 2 FOR OUTSIDE LINES AND VERTICAL LINES

USE TIMES NEW ROMAN FONT

WT = 2, TX = XL

WT = 2, TX = S

WT = 3, TX = TITLES

USE FANCY AS THE TEXT STYLE

WT = 2, TX = XL

SHOW DRAWING NUMBER, SHEET NUMBER, NUMBER OF SHEETS AND DESCRIPTION IN THE STRUCTURE DRAWING TABLE

ROADWAY DRAWINGS

SHEET NUMBER	NUMBER OF SHEETS	DESCRIPTION
1	1	
1A	1	TITLE SHEET
1B to 1C	2	INDEX TO SHEETS
1D	1	INDEX TO STANDARD DRAWINGS
1E, 1-F	2	STORM WATER POLLUTION PREVENTION PLAN
1G	1	CROSS REFERENCE INDEX SHEET
1H to 1I	2	ABBREVIATIONS & LEGEND
		SURVEY CONTROL SHEETS
		TYPICAL SECTIONS
TS-01 to TS-09	9	ROADWAY DETAIL SHEETS
DT-01 to DT-21	21	MAINTENANCE OF TRAFFIC SHEETS
MT-01 to MT-02	2	ROADWAY PLAN
RD-01 to RD-14	14	ROADWAY PROFILE
RP-01 to RP-16	16	UTILITY / TOPOGRAPHY SHEETS
UT-01 to UT-13	13	UTILITY RELOCATE SHEETS
UR-01 to UR-13	13	GRADING SHEETS
GR-01 to GR-05	0	DRAINAGE SHEETS
DR-01 to DR-13	25	IRIGATION SHEETS
IR-01 to IR-11	25	LANDSCAPING SHEETS / EROSION CONTROL SHEETS
LS-01 to LS-13	13	SIGNING SHEETS
SS-01 to SS-14	14	STRIPING SHEETS
ST-01 to ST-15	15	SIGNAL SHEETS
SG-1A to SG -07	7	LIGHTING SHEETS
LT-01 to LT-13	13	ADVANCED TRAFFIC MANAGEMENT SYSTEM SHEETS
AT-01 to AT-12	12	RIGHT OF WAY SHEETS
RW-5 to RW-15	2	SOUTH JORDAN SHEETS
SWL-01 to SWL-16	16	DRY UTILITY TRENCH SHEETS
DU-01 to DU-13	13	

SHOW SHEETS THAT FOLLOW

STRUCTURE DRAWINGS

DRAWING NUMBER	SHEET NUMBER	NUMBER OF SHEETS	DESCRIPTION
E-2570	1 to 4	1	BOX CULVERT

WT = 1, TX = S

USE WEIGHT 1 FOR HORIZONTAL LINES

SHOW ROADWAY DRAWING TABLE

USE WEIGHT 2 FOR OUTSIDE LINES AND VERTICAL LINES

SHOW STRUCTURE DRAWING TABLE

FOR SMALL PROJECTS USE THIS SHEET (INDEX TO SHEETS) ON THE TITLE SHEET IF ROOM PERMITS.

UTAH DEPARTMENT OF TRANSPORTATION
REGION 2 SALT LAKE CITY, UTAH
ROADWAY DESIGN

REDWOOD ROAD
11800 TO 10600 SOUTH
INDEX TO SHEETS

PROJECT NUMBER
SP-0068(24)43

SALT LAKE
COUNTY

SHEET NO. 1-A

REVISIONS
DATE
BY
REVISIONS
DATE
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UTAH DEPARTMENT OF TRANSPORTATION

STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION

DWG. NO.	DESCRIPTION	DATE
	Advanced Traffic Management System (ATS)	
AT 1	LEGEND SHEET	07-03-02
AT 2	RAMP METER DETAILS	07-03-02
AT 3	RAMP METER SIGN PANEL	07-03-02
AT 4	TYPICAL RAMP METER SIGNAL HEAD MOUNTING	07-03-02
AT 5	LOOP INSTALLATION	07-03-02
AT 6	CONDUIT DETAILS	07-03-02
AT 7	POLYMER-CONCRETE JUNCTION BOX DETAILS	07-03-02
AT 8	ATMS CABINET W/120V DISCONNECT	07-03-02
AT 9	ATMS CAB WITH STEPDOWN TRANSFORMER	07-03-02
AT 10	DOMED CCTV DETAILS	07-03-02
AT 11	CCTV POLE DETAIL	07-03-02
AT 12	CCTV POLE FOUNDATION FOR DEDICATED CCTV POLE	07-03-02
AT 13	120V VMS CAB FOUNDATION DETAILS	07-03-02
AT 14	WEIGHT IN MOTION PIEZO DETAIL	07-03-02
	Barriers (BA)	
BA 1A	PRECAST CONCRETE FULL BARRIER STANDARD SECTION	07-03-02
BA 1B	PRECAST CONCRETE FULL BARRIER STANDARD SECTION	07-03-02
BA 2	PRECAST CONCRETE HALF BARRIER STANDARD SECTION	07-03-02
BA 3	CAST IN PLACE CONSTANT SLOPE BARRIER	07-03-02
BA 4	BEAM GUARDRAIL HARDWARE	07-03-02
BA 4A	GUARDRAIL TRANSITION	07-03-02
BA 4B	BEAM GUARDRAIL INSTALLATIONS	07-03-02
BA 5	TRAFFIC CONTROL CABLE	07-03-02
	Catch Basins and Cleanouts (CB)	
CB 1	STANDARD CATCH BASIN	07-03-02
CB 2	CURB INLET CATCH BASIN	07-03-02
CB 3	STANDARD TRANSITION CONCRETE LINED DITCH TO PIPE OR DIVERSION BOX	07-03-02
CB 4	SOLID COVER FOR STD DWG DB 1 MS-18 LOADING	07-03-02
CB 5	STANDARD SCREW GATE AND FRAME	07-03-02
CB 6A	STANDARD DROP INLET DETAILS GENERAL NOTES AND INSTALLATION DETAIL	07-03-02
CB 6B	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "A" DETAILS	07-03-02
CB 6C	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "B" DETAILS	07-03-02
CB 6D	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "C" DETAILS	07-03-02
CB 6E	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET WITH ATTACHED APRON DETAILS	07-03-02
CB 6F	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET WITH ATTACHED APRON DETAILS	07-03-02
CB 6G	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "D" DETAILS	07-03-02
CB 6H	STANDARD CATCH BASIN AND CLEANOUT BOX DROP INLET TYPE "D" TABLES	07-03-02
CB 7	STANDARD CURB AND GUTTER DROP INLET	07-03-02
CB 8A	DOUBLE CATCH BASIN	07-03-02
CB 8B	DOUBLE CATCH BASIN	07-03-02

 MARKED BOXES INDICATE DRAWINGS APPLICABLE TO THIS PROJECT

[illegible]

~~USE WEIGHT 1~~

[illegible]

***THIS SHEET DOES NOT NEED
TO BE FILLED OUT UNTIL PS&E***

***BRING IN MOST CURRENT
STANDARD DRAWING FROM
UDOT STANDARDS.***

Drainage (DC)

Environmental Controls (EN)

Fence and Gates (FG)[illegible]

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

STANDARD DRAWING INDEX SHEET

STD DWG
1-B & 1-C

UDOT - STORM WATER POLLUTION PREVENTION PLAN

1. SITE DESCRIPTION

PROJECT LIMITS:

SR-68 REDWOOD ROAD: 10600 SOUTH TO 10600 SOUTH

PROJECT DESCRIPTION:

RECONSTRUCT AND WIDEN ROADWAY, CONCRETE SURFACING, INSTALL STORM DRAIN.
NEW BOX CULVERT AT MIDAS CREEK CROSSING, SIGNING, REPLACE SIGNAL
AT 10600 SOUTH, ATMS, CONSTRUCT NEW SOUTH JORDAN WATER LINE

MAJOR SOIL DISTURBING ACTIVITIES:

(CHECK THE FOLLOWING AS THEY APPLY)

- ☒ CLEAR AND GRUBBING
- ☒ EXCAVATION
- ☒ GRADING
- ☒ PLACEMENT OF FILL
- ☒ CUT AND FILL
- ☒ OTHERS: REMOVAL OF BUILDINGS AND OTHER STRUCTURES

TOTAL PROJECT AREA:

23.76 ACRES

TOTAL AREA TO BE DISTURBED:

23.76 ACRES

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION):

.89

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF VEGETATION COVER:

20% GRASS FAIR TO POOR AND 80% HARD SURFACE

NAME OF RECEIVING WATERS:

STORM DRAIN ON 10400 SOUTH
IRRIGATION SYSTEM RELATED TO THE SOUTH JORDAN CANAL

INCLUDE PROJECT LIMITS AND
DESCRIPTION. DO NOT JUST
REFER TO THE PLAN SHEETS.

2. CONTROLS:

2a. EROSION AND SEDIMENT

• STABILIZATION PRACTICES:

- ☐ TEMPORARY SEEDING
- ☒ PERMANENT PLANTING, SODING, OR SEEDING
- ☒ MULCHING
- ☐ GEOTEXTILES
- ☐ VEGETATIVE BUFFER STRIPS
- ☐ PRESERVATION OF TREES
- ☐ OTHERS:

• STRUCTURAL PRACTICES:

- ☒ SILT FENCES
- ☒ HAY BALES
- ☒ ROCK BERMS
- ☐ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ☐ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ☐ DIVERSION DIKE AND SWALE COMBINATIONS
- ☐ PIPE SLOPE DRAINS
- ☐ PAVED FLUMES
- ☐ RIPRAP
- ☒ DROP INLET BARRIER
- ☐ CHANNEL LINERS
- ☒ SEDIMENT TRAPS
- ☐ SEDIMENT BASINS
- ☒ STORM INLET SEDIMENT TRAP
- ☒ STORM OUTLET STRUCTURES
- ☒ CURBS AND GUTTERS
- ☒ STORM SEWERS
- ☐ VELOCITY CONTROL DEVICES
- ☒ OTHERS: DROP INLET BARRIER (ROCK)

• 404 PERMIT APPLIES FOR CONSTRUCTION OF CONTROLS:

YES---- NO--X--

404 PERMIT AND CONDITIONS THEREOF INCLUDING BEST MANAGEMENT PRACTICES, IF
APPLICABLE, IN THE FORM OF SPECIAL PROVISIONS ARE INCLUDED IN THE PLANS
AND SPECIFICATIONS ? YES---- NO----

• NARRATIVE - SEQUENCE OF CONSTRUCTION ACTIVITIES

(CONTROLS AND STORM WATER MANAGEMENT)

COMPLY WITH SECTION 00555

2b. STORM WATER MANAGEMENT:

STORM WATER RUNOFF DURING AND AFTER CONSTRUCTION WILL BE HANDLED BY DITCHES, CHANNELS,
AND DROP INLETS INTO CROSS CULVERTS OR STORM DRAIN AS DESIGNED. SUCH SYSTEMS WILL BE
CONSTRUCTED WITHIN THE RIGHT OF WAY AND DISPOSED OF TO APPROPRIATE OUTLETS OR OUTFALLS
WITH MITIGATION IF NECESSARY.

• 404 PERMIT APPLIES FOR CONSTRUCTION OF STORM WATER MANAGEMENT SYSTEMS:

YES---- NO--X--

404 PERMIT AND CONDITIONS THEREOF INCLUDING BEST MANAGEMENT PRACTICES, IF
APPLICABLE, IN THE FORM OF SPECIAL PROVISIONS ARE INCLUDED IN THE PLANS
AND SPECIFICATIONS ? YES---- NO----

WT=1, TX=S

LOCATION
SHEET STATION

LS-01 - LS-13

• NARRATIVE-SEQUENCE OF CONSTRUCTION OF STORM WATER MANAGEMENT SYSTEMS:

COMPLY WITH SECTION 00555, PART 1, PARAGRAPH "PROGRESS SCHEDULE"

2c. OTHER CONTROLS:

• WASTE MATERIALS AND DISPOSAL:

COMPLY WITH SECTIONS 00725, PART 1, "FINAL CLEANUP" ;
00820; AND 01455, PART 1, PARAGRAPH "FINISHING LOCAL MATERIAL SOURCE SITES".

• OFFSITE VEHICLE TRACKING AND DUST CONTROL:

COMPLY WITH SECTION 01572

• HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

COMPLY WITH SECTION 01355, PART 1, PARAGRAPH "HAZARDOUS MATERIAL -
DISCOVERED DURING CONSTRUCTION" AND "HAZARDOUS MATERIAL - CONTRACTOR CAUSED".

• SANITARY WASTE:

COMPLY WITH SECTION 00820

2d. APPROVED STATE OR LOCAL PLANS:

THIS STORM WATER POLLUTION PREVENTION PLAN HAS BEEN DEVELOPED IN ACCORDANCE WITH THE
PROVISIONS OF THE MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN THE UDOT AND THE UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE BEST MANAGEMENT PRACTICE (BMP) PLANS
AND HAS BEEN APPROVED BY THE UTAH DIVISION OF WATER QUALITY.

3. MAINTENANCE:

COMPLY WITH SECTION 00725, PART 1, PARAGRAPH "CONTRACTOR'S RESPONSIBILITY FOR WORK"
AND 01571, PART 1, PARAGRAPH 15 "MAINTAINING THE WORK DURING CONSTRUCTION".

4. INSPECTION:

COMPLY WITH SECTION 01571

5. NON-STORM WATER DISCHARGES:

COMPLY WITH APPROPRIATE SECTIONS OF DIVISION 2 (SITE WORK) AND 3 (CONCRETE).

GENERAL NOTES:

1. THIS STORM WATER POLLUTION PREVENTION PLAN SHALL BE IMPLEMENTED IN
ACCORDANCE WITH UDOT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE
CONSTRUCTION 2002 EDITION WITH SPECIAL EMPHASIS ON DIVISION 1 AND SECTIONS 01571,
01572 AND ANY APPROPRIATE SPECIAL PROVISIONS REQUIRED FOR THE PROJECT.
2. ALL SECTIONS AND SUBSECTIONS HEREIN ARE REFERENCES TO UDOT'S STANDARD
SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2002 EDITION.
3. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THIS STORM WATER
POLLUTION PREVENTION PLAN FOR ANY ADDITIONAL CONSTRUCTION ACTIVITIES
PERFORMED WITHIN THE PROJECT LIMITS NOT COVERED UNDER THE CONTRACT.

COORDINATE THIS SHEET WITH THE
REGION ENVIRONMENTAL GROUP.

UTAH DEPARTMENT OF TRANSPORTATION
REGION TWO -- SALT LAKE CITY, UTAH
ROADWAY DESIGN

REDWOOD ROAD
11800 TO 10600 SOUTH
STORM WATER PLAN
PROJECT NUMBER
SP-0068124143

SALT LAKE
COUNTY

SHEET NO. 1-X

CROSS REFERENCE SHEET

REDWOOD ROAD (SR-68)

TX = LARGE TITLE, WT = 3
FONT = TIMES NEW ROMAN

TX = XL, WT = 2
FONT = TIMES NEW ROMAN

WT = 1, TX = S

WT = 2

SHOW FLAGS BEGINNING AND
ENDING, PROJECT NUMBER,
STATIONS, EQUATIONS AND
COORDINATES.

USE A CELL FOR FLAGS
AT THE PROPER SCALE

STP-0068(13)45
END PROJECT
STA. 197+13.06
N. 100.108.864
E. 200.000.602

RE-ANNOTATE ALIGNMENTS (STATIONS
AND MAJOR TICKS) FOR THE SCALE OF
THIS SHEET.

WT = 2, TX = L

SHOW DOT AT
END OF LEADER

WT = 2

MATCH LINE STA 163+00
SEE SHEET 1F

WT = 3

WT = 2, TX = L

BOX CULVERT
E-3410

LABEL ALL STRUCTURES
INCLUDING STRUCTURE
NUMBER.

SHOW DESCRIPTION AND SHEET NUMBERS
THAT APPLY TO EACH SHEET

UTILITY/TOPOGRAPHY SHEET NO. UT-8
ROADWAY PLAN SHEET NO. RD-8
ROADWAY PROFILE SHEET NO. RP-8
DRAINAGE SHEET NO. DR-8
STRIPING SHEET NO. ST-8
SIGNING SHEET NO. SS-8
LANDSCAPING SHEET NO. LS-8
UTILITY RELOCATION SHEET NO. UR-8
LIGHTING SHEET NO. LT-8

UTILITY/TOPOGRAPHY SHEET NO. UT-10
ROADWAY PLAN SHEET NO. RD-10
ROADWAY PROFILE SHEET NO. RP-10
DRAINAGE SHEET NO. DR-10
STRIPING SHEET NO. ST-10
SIGNING SHEET NO. SS-10
LANDSCAPING SHEET NO. LS-10
UTILITY RELOCATION SHEET NO. UR-10
LIGHTING SHEET NO. LT-10

STRIPING SHEET NO. ST-12

UTILITY/TOPOGRAPHY SHEET NO. UT-7
ROADWAY PLAN SHEET NO. RD-7
ROADWAY PROFILE SHEET NO. RP-7
DRAINAGE SHEET NO. DR-7
STRIPING SHEET NO. ST-7
SIGNING SHEET NO. SS-7
LANDSCAPING SHEET NO. LS-7
UTILITY RELOCATION SHEET NO. UR-7
LIGHTING SHEET NO. LT-7

UTILITY/TOPOGRAPHY SHEET NO. UT-9
ROADWAY PLAN SHEET NO. RD-9
ROADWAY PROFILE SHEET NO. RP-9
DRAINAGE SHEET NO. DR-9
STRIPING SHEET NO. ST-9
SIGNING SHEET NO. SS-9
LANDSCAPING SHEET NO. LS-9
UTILITY RELOCATION SHEET NO. UR-9
LIGHTING SHEET NO. LT-9

UTILITY/TOPOGRAPHY SHEET NO. UT-11
ROADWAY PLAN SHEET NO. RD-11
ROADWAY PROFILE SHEET NO. RP-11
DRAINAGE SHEET NO. DR-11
STRIPING SHEET NO. ST-11
SIGNING SHEET NO. SS-11
LANDSCAPING SHEET NO. LS-11
UTILITY RELOCATION SHEET NO. UR-11
LIGHTING SHEET NO. LT-11

UTAH DEPARTMENT OF TRANSPORTATION
REGION TWO -- SALT LAKE CITY, UTAH
ROADWAY DESIGN

REDWOOD ROAD
11800 TO 10600 SOUTH
CROSS REFERENCE SHEET

SALT LAKE
COUNTY

SHEET NO. 1-X

PROJECT NUMBER
SP-0068(24)43

APPROVED
DATE

DESIGN AFR 8/02
CHECK AFR 8/02
DATE

PROJECT DESIGN ENGINEER
DATE

PRECONSTRUCTION ENGINEER
DATE

QUANT.
CHECK

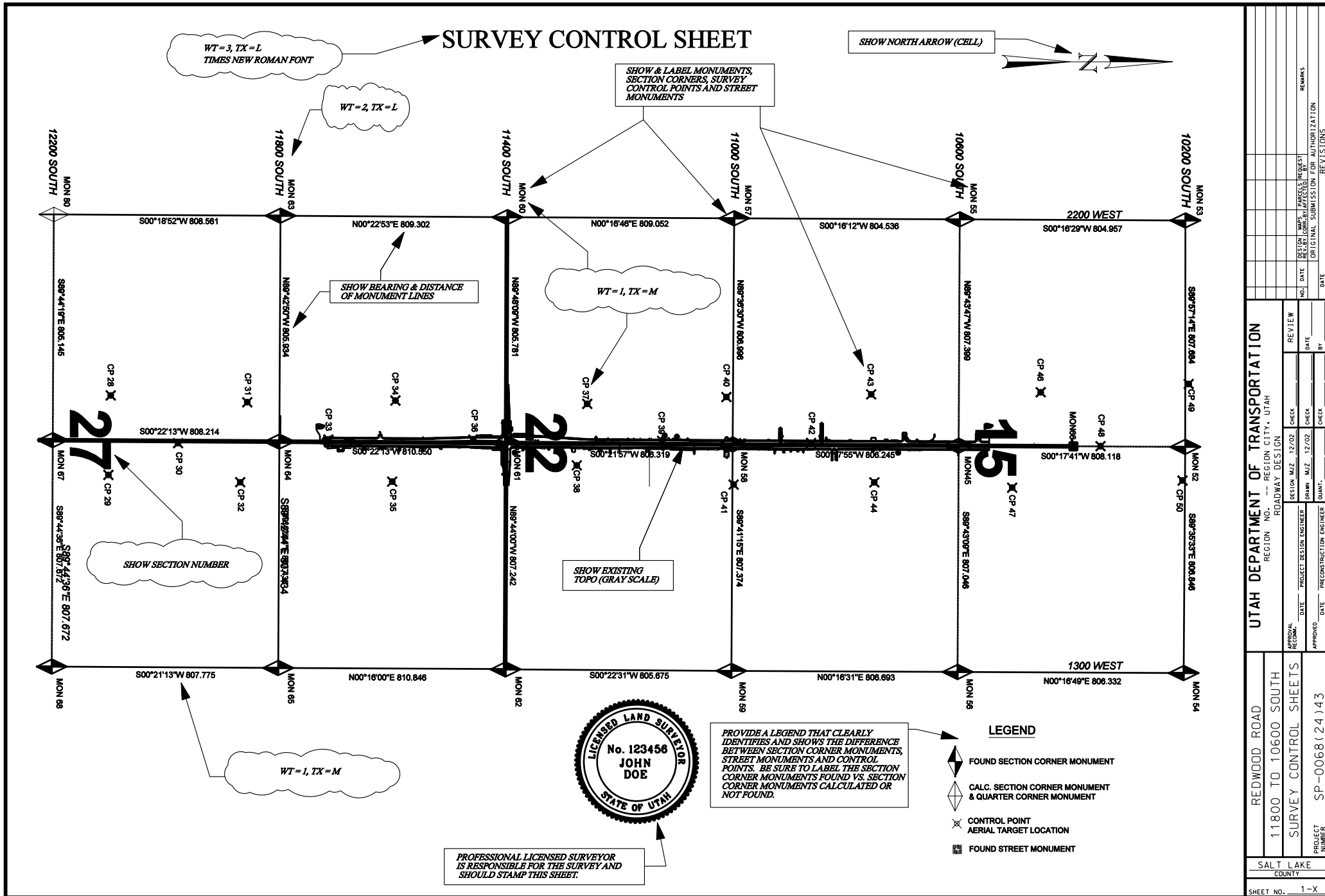
REVIEW
DATE

REVISIONS

REMARKS

ORIGINAL SUBMISSION FOR AUTHORIZATION

DATE



SURVEY CONTROL SHEET

WT = 3, TX = TITLE
FONT = TIMES NEW ROMAN

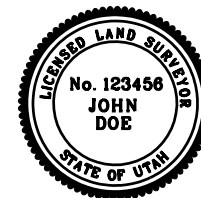
PROVIDE LATITUDE & LONGITUDE AND
COORDINATE WHEN REQUESTED BY THE
REGION RIGHT-OF-WAY MANAGER.

SHOW POINT NUMBERS, LATITUDE, LONGITUDE, PROJECT
COORDINATES - WHICH INCLUDE NORTHING AND EASTING,
ELEVATIONS, DESCRIPTION AND COMMENTS

WT = 2, TX = L

WT = 1

COMBINE SURVEY,
CROSS REFERENCE
SHEETS AND CONTROL
SHEETS FOR SMALL
PROJECTS.



PROFESSIONAL LICENSED SURVEYOR
IS RESPONSIBLE FOR THE SURVEY AND
SHOULD STAMP THIS SHEET.

POINT #	LATITUDE	LONGITUDE	PROJECT COORDINATES		ELEVATION	DESCRIPTION	COMMENTS
			NORTHING	EASTING			
28			34780.108732	49388.337579	4445.683	AT	
29			34752.203777	50319.327766	4435.441	AT	
30			35567.304853	49947.678476	4440.821	AT	
31			36377.908029	49467.976033	4428.015	AT	
32			36294.788341	50404.320879	4424.011	AT	
33			37326.775382	49905.200456	4436.858	AT	
34			38111.056739	49448.485219	4446.150	AT	
35			38074.104671	50396.875997	4433.262	AT	
36			39022.672811	49905.077425	4445.557	AT	
37			40356.514061	49485.941585	4446.769	AT	
38			40233.534300	50207.180125	4434.172	AT	
39			41233.574555	49921.394683	4440.643	AT	
40			41984.602467	49407.399915	4449.713	AT	
41			42070.385868	50431.432429	4431.820	AT	
42			42976.047249	49944.586284	4447.984	AT	
43			43679.774371	49376.293287	4456.786	AT	
44			43716.033395	50405.978359	4446.076	AT	
45			44703.446254	49976.863516	4458.318	QC-ATC SEC15	
46			45663.210163	49350.624323	4478.750	AT	
47			45329.294798	50468.077771	4460.438	AT	
48			46363.229542	49981.941600	4481.348	AT	
49			47394.881478	49254.317561	4484.769	AT	
50			47323.063563	50384.927834	4468.122	AT	
52			47354.715795	49990.495735	4464.553	QC-N SEC15	
53			47356.846372	47340.613432	4517.026	SC NW SEC15	
54			47335.888038	52637.561108	4419.918	SC NE SEC15	
55			44715.943072	47327.945453	4488.201	QC-W SEC15	
56			44690.473354	52624.619507	4407.094	QC-E SEC15	
57			42076.418250	47315.512709	4478.230	SC-NW SEC22	
58			42058.321695	49963.076114	4440.829	QC-N SEC22	
59			42043.874253	52611.900346	4390.758	SC NE SEC22	
60			39422.081125	47302.562250	4478.109	QC-W SEC22	
61			39412.971807	49946.184381	4441.843	QC-C SEC22	
62			39400.639917	52594.587353	4398.819	QC-E SEC22	
63			36766.950561	47284.885740	4466.195	SC-NW SEC27	
64			36753.743539	49928.993764	4436.825	QC-N SEC27	
65			36740.432548	52578.021736	4401.606	SC-NE SEC27	
67			34102.179675	49911.854984	4440.776	QC-C SEC27	
68			34090.304018	52561.671670	4407.791	QC-E SEC27	

UTAH DEPARTMENT OF TRANSPORTATION		REGION NO. -- REGION CITY, UTAH		DESIGN M/J 12/02		REVIEW	
REDWOOD ROAD		ROADWAY DESIGN		BRAN M/J 12/02		CHECK	
11800 TO 10600 SOUTH		PROJECT DESIGN ENGINEER		DATE		BY	
SURVEY CONTROL SHEET		PRECONSTRUCTION ENGINEER		DATE		CHECK	
PROJECT NUMBER		QUANT.		APPROVED		REMARKS	
SP-0068(24)43							
SALT LAKE COUNTY							
SHEET NO. 1-X							

ABBREVIATIONS

**WT=2, TX=TITLE
ENGINEERING FONT**

SHOW AND LABEL SYMBOLS AND DESCRIPTION OF THE LEGEND. MAKE SURE THAT THE SYMBOLS AGREE WITH THE SURVEY.

-  BUS BENCH
-  CATCH BASIN
-  CONTROL POINT
-  ELECTRICAL JUNCTION BOX
-  FIRE HYDRANT
-  GUY WIRE
-  IRRIGATION BOX
-  LIGHT POLE
-  MAIL BOX
-  MANHOLE
-  METER (WATER OR GAS)
-  MONUMENT/SECTION CORNER

- POTHOLE/TEST HOLE
- ⦿ POWER POLE
- ⦿ RIGHT OF WAY MARKER
- SIGN (MULTI POST)
- SIGN (SINGLE POST)
- ⊠ SIGNAL CONTROLLER
- ⊠ SIGNAL JUNCTION BOX
- ⊗ SIGNAL POLE
- ⊠ TELEPHONE BOOTH
- ⊠ TELEPHONE BOX
- TELEPHONE PEDESTAL
- ⋈ VALVE

CRS CONTROL POINT

◆ FOUND SECTION CORNER MONUMENT

◇ CALCULATED SECTION CORNER MONUMENT

CALCULATED SECTION CORNER MONUMENT
LOCATIONS ARE BASED ON SALT LAKE COUNTY'S
STATE PLANE COORDINATE PLAT, ON FILE AT
SALT LAKE COUNTY SURVEYORS OFFICE.

Diagram illustrating the cross-section of a road and its various utilities, showing the relationship between the road structure and the underlying infrastructure.

Utility Type	Code	Description
Retaining Wall		RETAINING WALL
Concrete Retaining Wall		CONCRETE RETAINING WALL
UDOT ATMS Fiber Optic (Existing)	fo	UDOT ATMS FIBER OPTIC (EXISTING)
UDOT ATMS Fiber Optic (Proposed)	FD	UDOT ATMS FIBER OPTIC (PROPOSED)
Buried Cable (Existing)	bctv	BURIED CABLE (EXISTING)
Buried Cable (Proposed)	BCTV	BURIED CABLE (PROPOSED)
Overhead Cable (Existing)	ctv	OVERHEAD CABLE (EXISTING)
Overhead Cable (Proposed)	CTV	OVERHEAD CABLE (PROPOSED)
Irrigation Ditch	ir	IRRIGATION DITCH
Buried Power Line (Existing)	be	BURIED POWER LINE (EXISTING)
Buried Power Line (Proposed)	BE	BURIED POWER LINE (PROPOSED)
Overhead Power Line (Existing)	e	OVERHEAD POWER LINE (EXISTING)
Overhead Power Line (Proposed)	E	OVERHEAD POWER LINE (PROPOSED)
Fence	x	FENCE
Fence (Chain Link)		FENCE (CHAIN LINK)
Fence Wood (Existing)		FENCE WOOD (EXISTING)
Fence Wood (Proposed)		FENCE WOOD (PROPOSED)
Flow Line		FLOW LINE
Gas Line (Existing)	g	GAS LINE (EXISTING)
Gas Line (Proposed)	G	GAS LINE (PROPOSED)
Guard Rail		GUARD RAIL
Irrigation Line (Existing)	ir	IRRIGATION LINE (EXISTING)
Irrigation Line (Proposed)	IR	IRRIGATION LINE (PROPOSED)
Sanitary Sewer (Existing)	swr	SANITARY SEWER (EXISTING)
Sanitary Sewer (Proposed)	SWR	SANITARY SEWER (PROPOSED)
Storm Drain (Existing)	sd	STORM DRAIN (EXISTING)
Storm Drain (Proposed)	SD	STORM DRAIN (PROPOSED)
Buried Telephone Line (Existing)	btel	BURIED TELEPHONE LINE (EXISTING)
Buried Telephone Line (Proposed)	BTEL	BURIED TELEPHONE LINE (PROPOSED)
Overhead Telephone Line (Existing)	tel	OVERHEAD TELEPHONE LINE (EXISTING)
Overhead Telephone Line (Proposed)	TEL	OVERHEAD TELEPHONE LINE (PROPOSED)
Water Line (Existing)	wtr	WATER LINE (EXISTING)
Water Line (Proposed)	WTR	WATER LINE (PROPOSED)

**SHOW ABBREVIATIONS AND LEGEND
THAT APPLY TO EACH PROJECT**

THIS SHEET IS OPTIONAL

TYPICAL SECTIONS

DESCRIPTION

Typical Section sheets (TS Sheets) show the proposed typical sections and existing pavement sections.

TS SHEET CHECKLIST

- ❑ Existing sections: provide at least one existing section for each project. Number existing sections and label them “Existing Section No. X”. Place existing typical sections up front prior to the typical sections.

The main purpose of the existing sections is to show the existing pavement section with a typical width. As such, most projects will require only one existing section. However, if there is a substantial change in the existing pavement section (i.e., concrete vs. asphalt, substantial variations in thickness) additional pavement sections should be provided.

- ❑ Tie-ins: Provide typical section showing how the new pavement section ties into the existing pavement.

Tie-ins are often required to transition the new crown into the existing crown. Tie-ins may also use a different pavement section because they may be temporary.

- ❑ Each typical section has a number, the name of the roadway, the station limits, and the design speed.
- ❑ Label and dimension (in inches) all parts of the pavement section (surface course, base course, sub-base, etc.).

Be sure to verify that the pavement section shown in the typical sections agrees with the approved pavement design.

- ❑ Label and show the location of the control line and profile grade.
- ❑ Label all applicable pay items shown in the typical section, checking that they

match UDOT standards EXACTLY.

- ❑ Show width and shape of finished surfaces and shoulders.

SIDE SLOPES AND TREATMENTS

Side slopes are an essential part of showing how a new roadway is built. As such, the side slopes should be shown on the typical sections with the rate clearly labeled.

IMPORTANT: Cut & fill slopes should not be ambiguous. That is, it should be clear where the side slope applies and what slope is used.

For projects that use standard cut & fill slopes, it is easy and preferable to show the side slopes right on the typical sections. However, to avoid an excessive number of typical sections for projects with complex or numerous side slopes, side treatments should be shown separately a different sheet. Use a table to indicate station by station which side treatments applies.

GUIDELINES ON THE NUMBER OF TYPICAL SECTIONS

The number of typical sections required for a project varies, depending on a variety of factors. On one hand, it is essential that enough typical sections be included to allow a contractor to understand how the road is built. On the other hand, it is possible to show so many typical sections that the plan set is confusing and difficult to follow. This is especially true if a typical section is developed for “every situation” on complex, urban projects.

The following guidelines have been developed to help the designer determine the appropriate number of typical sections required for the project.

DO PROVIDE SEPARATE TYPICAL SECTIONS:

- ❑ For each alignment (mainline, ramps, frontage roads, etc.).
- ❑ For different lane configurations.

Typical Sections (Continued)

- ❑ When the pavement section changes.
- ❑ When the improvements change significantly (i.e., one section has curb and gutter with sidewalk versus another section without curb and gutter).
- ❑ When the cross section has major differences (i.e., depressed median versus raised median)
- ❑ For structures.

Optional: Typical sections for bridges can be omitted from the roadway plans if they are included with the structure plans.

SUGGESTION: It will make things easier if the typical sections in PIN_typical are organized inside of boxes. These boxes should be placed on a non-print level and be the same size as the inside drawing area of a scaled sheet file border.

DON'T:

- ❑ Show a typical section where everything is varying (for example, at intersection approaches or transition sections). Handle this situation by using tables to show pavement width transitions and referring to the striping sheets for striping transitions.
- ❑ Make a new typical section for minor changes in cross section that occur for a very short distance (i.e., 4' sidewalk versus 6' sidewalk for 100 feet). Handle these situations with a detail and a table on the TS Sheet.

REFERENCE FILES

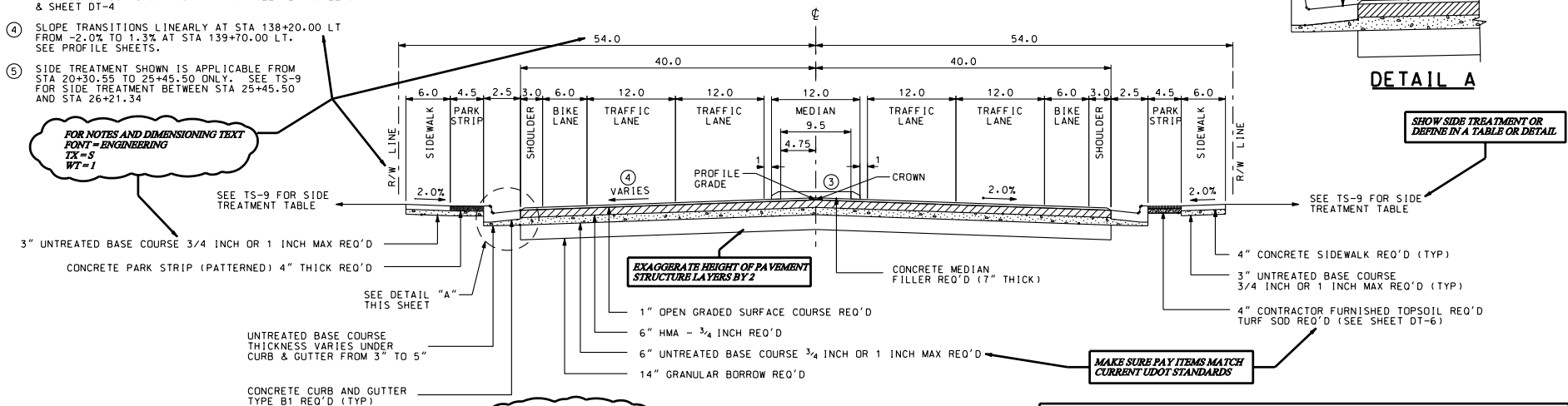
The following file(s) should be referenced into each TS Sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Typical.dgn	Typical	Yes

Keep all of the typical sections (including notes and labeling) in one file (PIN_typical). Do not place any notes in the sheet file. Keeping all the information in one file will make it easy to make changes and shift things around if a typical section is added or deleted.

- ① ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.
- ② PROFILE GRADE IS TAKEN AT THE TOP OF HOT MIX ASPHALT.
- ③ LOCATION & WIDTH OF RAISED ISLAND VARIES FROM STA 130+88.98 TO STA 137+44.76. SEE PLAN SHEETS & SHEET DT-4
- ④ SLOPE TRANSITIONS LINEARLY AT STA 138+20.00 LT FROM -2.0% TO 1.3% AT STA 139+70.00 LT. SEE PROFILE SHEETS.
- ⑤ SIDE TREATMENT SHOWN IS APPLICABLE FROM STA 20+50.55 TO 25+45.50 ONLY. SEE TS-9 FOR SIDE TREATMENT BETWEEN STA 25+45.50 AND STA 26+21.34.

TYPICAL SECTION NO. 1



REDWOOD ROAD (SR-68)

STA 23+72.75	TO	STA 24+21.99
STA 25+15.24	TO	STA 26+05.26

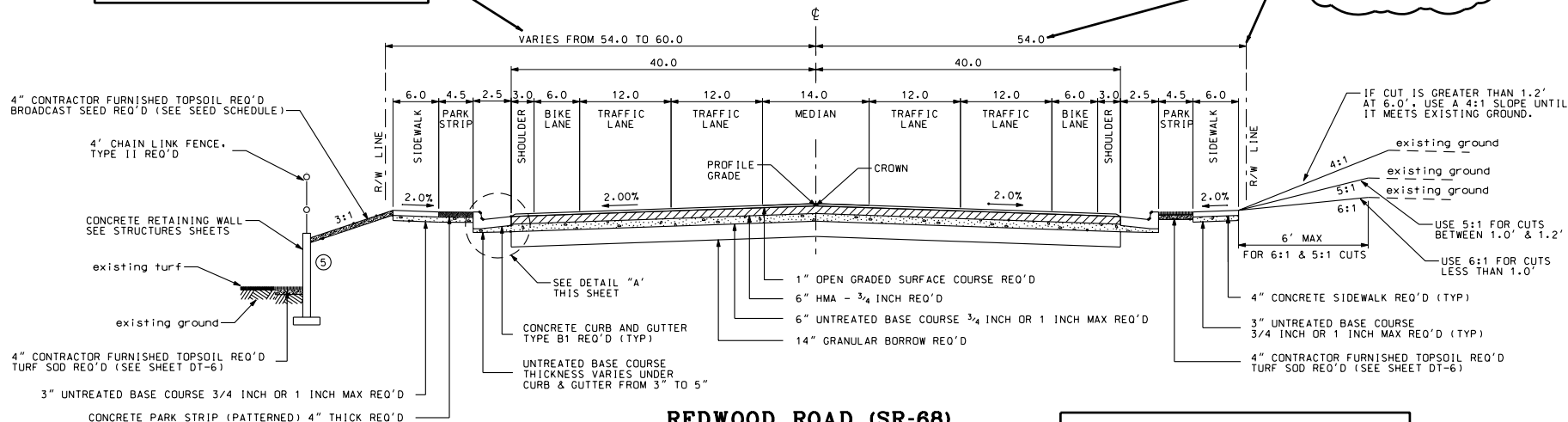
DESIGN SPEED 50 MPH

PROVIDE TYPICAL SECTIONS FOR EACH ALIGNMENT AND WHEN CHANGES OCCUR IN LANE CONFIGURATION, PAVEMENT SECTION, OR WHEN THERE IS A MAJOR CHANGE IN ROADWAY IMPROVEMENTS/FEATURES. MATCH STATIONING EXACTLY WITH STATIONING ON PLAN SHEETS WHERE THESE CHANGES OCCUR.

TYPICAL SECTION NO. 2

WHEN USING THE WORD "VARIES", IDENTIFY THE RANGE AND STATIONING OR ADD A NOTE REFERRING TO APPLICABLE SHEETS

DIMENSION LINES: WT =
EXTENSION LINES: WT =
TEXT: WT = 1
TERMINATOR: WT = 1



REDWOOD ROAD (SR-68)

(2200 NORTH TO 3300 NORTH)
STA 20+30.55 TO STA 26+21.34

DESIGN SPEED 50 MPH

SHOW THE FOLLOWING:
 * NAME OF ROADWAY (INCLUDE STATE ROUTE IF APPLICABLE)
 * STATION LIMITS
 * DESIGN SPEED

SHEET NO.		TS-01	
PROJECT		SP--0068124143	
COUNTY		SALT LAKE	
REDWOOD ROAD		UTAH DEPARTMENT OF TRANSPORTATION	
11800 TO 10600 SOUTH		REGION 2 -- SALT LAKE CITY, UTAH	
TYPICAL SECTION		ROADWAY DESIGN	
APPROVAL RECORD:	DATE	PROJECT DESIGN ENGINEER	REVIEW
APPROVED	DATE	PRECISION TRUCK ENGINEER	BY
DESIGN B-5	2/03	CHECK EAR	2/03
DESIGN B-5	2/03	CHECK EAR	2/03
NO.	DATE	DESIGN MAPS	PARCELS REQUEST
		UNAPPORTIONED AFFECTED	FOR AUTHORIZATION
		ON TOTAL SUBMITTAL	REVISIONS
		DATE	REMARKS

DETAIL SHEET REQUIREMENTS

DESCRIPTION

Detail Sheets (DT Sheets) contain all necessary detail drawings necessary to build the project.

DT SHEET CHECKLIST

- ❑ Details are drawn and dimensioned at full scale (1:1 scale). Reference the details into sheets file and scale the reference file, **not the actual drawing**.

Drawing at full scale makes dimensioning easier and helps keep dimensioning accurate.

- ❑ Draw all of the details in one file (PIN_Detail) and keep them organized.

SUGGESTION 1: It will make things easier if the details in PIN_detail are organized inside of boxes. These boxes should be placed on a non-print level and be the same size as the inside drawing area of a scaled sheet file border.

SUGGESTION 2: For projects with a lot of details, it is helpful to split the details into more than one file organized by category (for example, PIN_detail01 all concrete details, PIN_detail02 for under-drain details, PIN_detail03 for fence details, etc). This allows multiple users to work on the details at one time.

- ❑ Keep detail sheets organized by category in the plan set. For example, keep all of the roadway details sheets together, all of the drainage detail sheets together, etc.
- ❑ Keep notes and labeling for the details in the design file (PIN_Detail) with the details, not in the Sheet Files. Do not place any notes in the sheet file. Keeping all the information in one file will make it easy to make changes and shift things around if a detail is added or deleted.

REFERENCE FILES

The following file(s) should be referenced into each DT sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Detail.dgn	Detail	Yes

NOTES:

- ① ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.
- ② PAYMENT FOR UNDERDRAIN INCLUDES PIPE, UNDERDRAIN GRANULAR BACKFILL, AND GEOTEXTILES - SEPARATION. PAYMENT FOR GEOTEXTILE UNDER THE ROADWAY SECTION IS PAID FOR SEPARATELY.
- ③ ENCLOSE UNDERDRAIN GRANULAR BACKFILL WITH 12" OVERLAP
- ④ LANDSCAPE MEDIAN OCCURS FROM STA 157+20.46 TO 163+15.28 AND FROM STA 185+63.85 TO 190+20.28.

DETAILS ARE DRAWN AND DIMENSIONED AT FULL SCALE (1" = 1'-0"). REFERENCE THE DETAILS INTO SHEET FILE AND SCALE THE REFERENCE FILE, NOT THE ACTUAL DRAWING.

PLACE GENERAL NOTES IN UPPER LEFT HAND CORNER OF EACH SHEET. USE SMALL TEXT, FONT IS 3 ENGINEERING, WT=1

LEADER EXAMPLE: POINT TO THE LEADER AND USE DOTTED ARROW HEADS

TAIL ARROW HEAD

CALL OUTS: WT=1, TX=5

USE ESTABLISHED PATTERN AND HATCHES WHEN APPLICABLE. CREATE NEW AS NEEDED. PRINT TO VERIFY QUALITY AND READABILITY OF HATCHES AND PATTERNS

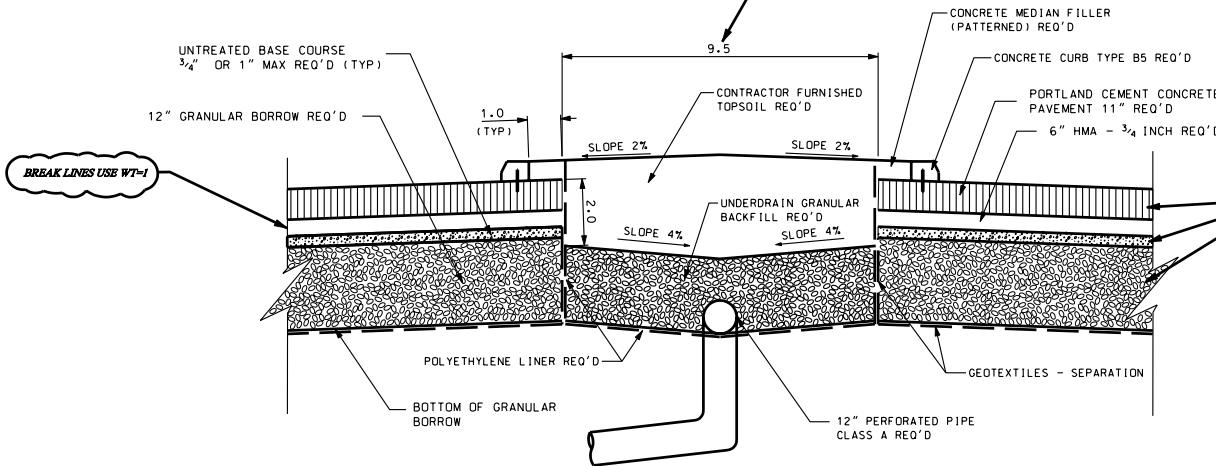
WHEN AN ITEM NEEDS TO STAND OUT WITH A HEAVY LINE WEIGHT LIKE A WT=2

LEADER LINES & ARROWS TO POINT TO THE OBJECT (TOUCHING THE OBJECT)

OFFSET UNDERDRAIN DETAIL

DIMENSION AS NEEDED AND SHOW IN A CLEAR PLACE, WT=1, TX=5

UNDERDRAIN DETAIL



BREAK LINES USE WT=1

WHEN SHOWING MULTIPLE ITEMS THAT MAKE UP A DETAIL, USE MULTIPLE PATTERNS OR HATCHES TO DIFFERENTIATE SINGLE ITEMS

LABELING DETAILS: WT=2, TX=XX UNDERLINE TEXT

LANDSCAPED MEDIAN DETAIL

SEE LANDSCAPE PLAN SHEETS FOR MEDIAN LANDSCAPING.

USE NUMBERS TO IDENTIFY GENERAL NOTES OR LENGTHY NOTES, WT=1, TX=5

UTAH DEPARTMENT OF TRANSPORTATION									
REGION 2 -- SALT LAKE CITY, UTAH									
ROADWAY DESIGN									
DESIGN	JMB	12/02	CHECK	EAR	1/03	REVIEW			
DATE			DATE			DATE			
PROJECT DESIGN ENGINEER			PROJECT DESIGN ENGINEER			PROJECT DESIGN ENGINEER			
DATE			DATE			DATE			
PRECONSTRUCTION ENGINEER			PRECONSTRUCTION ENGINEER			PRECONSTRUCTION ENGINEER			
DATE			DATE			DATE			
APPROVED			APPROVED			APPROVED			
DATE			DATE			DATE			
QUANT.			QUANT.			QUANT.			
QUANT.			QUANT.			QUANT.			
REVISIONS			REVISIONS			REVISIONS			
NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION	NO.
1			1			1			1
2			2			2			2
3			3			3			3
4			4			4			4
5			5			5			5
6			6			6			6
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ROADWAY PLAN SHEET REQUIREMENTS

DESCRIPTION

Roadway plan sheets (RD Sheets) contain information regarding alignment and identify all **new** roadway items for the project.

RD SHEET CHECKLIST

- ❑ Clearly label horizontal alignment. This includes: stationing, bearing, PC, PT, crossings with other alignments, and curve data (Δ , R, T, L, & PI station/coordinates).
- ❑ Callout all items of work for the new roadway.
- ❑ Logical names for existing topography begin with the letters “ex” so that proper grayscale is applied.

IPLOT's decision to grayscale is based on logical name, so proper logical name is very important.

- ❑ Label all structures. This includes bridges, box culverts, and retaining walls. The structure number can be obtained by calling the UDOT Structures Division.
- ❑ Label curb radii (radius, coordinates of center of curve, and PC/PT).
- ❑ Show cut & fill lines for mainline, ramps, and any side streets.
- ❑ Show driveway approach lengths, widths, and pavement type.
- ❑ Label tie-in with existing pavement
- ❑ Label the station of all pavement angle points with a leader pointing to the angle point (use a leader with a dot at the end, not an arrow).
- ❑ Driveway & Pedestrian Ramp Openings: Do not break sidewalk or curb and gutter callouts for driveway or pedestrian ramp openings. However, quantities for sidewalk and curb should be adjusted in the summary sheets for driveway or ramp openings.

HOW TO CALLOUT ITEMS

- ❑ A station & offset callout should be provided at the beginning and ending of each item, at angle points, at curb returns, and as necessary at match lines.
- ❑ Callout items to the nearest 100th of a foot.
- ❑ Curb or curb and gutter to top back of curb.
- ❑ Sidewalk to back of sidewalk.
- ❑ Driveways to the center of driveways at lip of curb.
- ❑ Pedestrian ramps to the center of ramps at top back of curb.

REFERENCE FILES

The following file(s) should be referenced into each RD sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Design.dgn	Design	Yes
PIN_Extopo.dgn	Extopo	Yes
PIN_Exutil.dgn	Exutil	No
PIN_Exrow.dgn	Exrow	No
PIN_Striping.dgn	Striping	No

To help the designer callout items and make decisions, it is helpful to reference files that will not be displayed when plotting the sheets

ROADWAY PROFILE SHEET REQUIREMENTS

DESCRIPTION

Roadway Profile Sheets (RP Sheets) are used to show the existing and proposed vertical alignment. They can also be used to display the proposed superelevation.

RP SHEET CHECKLIST (PROFILE)

- ☐ Show the alignment name on each profile sheet.
- ☐ The proposed vertical alignment is annotated.
- ☐ Station limits match plan sheet match line limits EXACTLY.
- ☐ Show existing and proposed elevations on the bottom axis.
- ☐ Identify and label names of major intersected streets, railroads, grade separation structures, culverts, streams, and other control lines.
- ☐ Use Inroads preference files to create profile sheets that conform to Department standards.

SUGGESTION: Using Inroads "Plan and Profile Generator" is an easy way to generate the profile sheets.

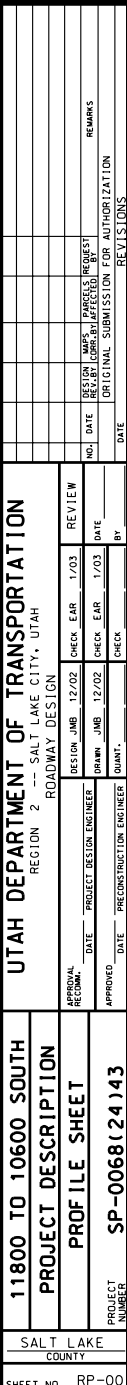
RP SHEET CHECKLIST (SUPERELEVATION)

- ☐ Show superelevation in the top half of the profile sheet.
- ☐ Label Station and rates at all transition points

REFERENCE FILES

The following file(s) should be referenced into each RP Sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Profile.dgn	Profile	Yes



TOPO & UTILITY SHEET REQUIREMENTS

DESCRIPTION

Topography and Utility sheets (UT Sheets) show existing topography, contours, and contain callouts for all removal items of work. UT Sheets also show existing utilities and callout all utility relocation and reconstruction items of work necessary to construct the project.

On certain projects (especially urban reconstruction projects) existing utilities may be too extensive to fit on the UT sheets. In these situations, existing utility information and utility relocation callouts should be shown separately on Utility Relocation Sheets (UR Sheets).

UT SHEET CHECKLIST

- ❑ Show the new alignment, stationing, curve data, and cut & fill lines from the design file. Do not show the proposed design.

Showing cut/ fill lines allows the contractor to see the limits of construction. Do not display the new design as this will clutter the drawing and make it hard to clearly see the existing topography, which is the main focus of these sheets.

- ❑ Callout all items than need to be removed, relocated, or reconstructed.
- ❑ If combining topography with utilities, label existing utilities and relocations as explained under UR-Sheet standards.
- ❑ Logical names for existing topography begin with the letters “ex” so that proper grayscale is applied.

IPLOT's decision to grayscale is based on logical name, so proper logical name is very important.

HOW TO CALLOUT ITEMS

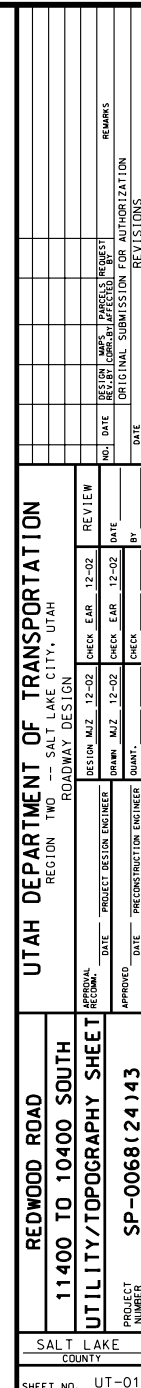
- ❑ A station & offset callout should be provided only at the beginning and ending of each item, and as necessary at match lines. Do not callout angle points.
- ❑ Removal Callouts: Callouts items to be removed or reconstructed to the nearest foot.
- ❑ Relocation Callouts: Callout items to be moved/relocated to greater accuracy (typically 100th of a foot). Callout relocations to the new location, followed by the existing location in parenthesis.

REFERENCE FILES

The following file(s) should be referenced into each UT Sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Design.dgn	Design	Partial
PIN_Extopo.dgn	Extopo	Yes
PIN_Exutil.dgn	Exutil	Yes
PIN_Exrow.dgn	Exrow	No

*Turn on only those levels in the design file to display alignment, stationing, and cut/ fill lines.
Do not turn on exutil if using a separate set of UR Sheets.*



UTILITY RELOCATION SHEET REQUIREMENTS

DESCRIPTION

Utility Relocation Sheets (UR Sheets) show existing utilities and contain callouts for the removal, reconstruction, or relocation of those utilities. Utility Relocation Sheets should be combined with Topography and Utility Sheets (UT Sheets) when possible for small projects.

UR SHEET CHECKLIST

- ❑ Show the new alignment, stationing, curve data, and cut & fill lines from the design file. Do not show the proposed design.

Showing cut/ fill lines allows the contractor and utility companies to see the limits of construction. Do not display the new design as this will clutter the drawing and make it hard to clearly see the existing utilities, which is the main focus of these sheets.

- ❑ Show existing utilities using UDOT line styles.
- ❑ Label utility sizes when applicable (one label for each utility per sheet for easy referencing). Labels include pipe size, size of fiber optic duct, and type of gas line (i.e., high pressure, intermediate high pressure, etc.).
- ❑ Provide an up-to-date utility contact list on the first UR Sheet.
- ❑ Logical names for existing topography and existing utilities begin with the letters “ex” so that proper grayscale is applied.

IPLOT’s decision to grayscale is based on logical name, so proper logical name is very important. Suggestion: You should consider modifying the UDOT.pen file to use a darker grayscale for existing utilities to make them stand out from the existing topography.

HOW TO CALLOUT ITEMS

- ❑ A station & offset callout should be provided only at the beginning and ending of each item, and as necessary at match lines. Do not callout angle points.
- ❑ Removal Callouts: Callouts items to be removed or reconstructed to the nearest foot.
- ❑ Relocation Callouts: Callout items to be relocated to greater accuracy (typically 100th of a foot). Callout relocations to the new location, followed by the existing location in parenthesis.
- ❑ For some callouts, it is unclear which utility is being impacted. For example, “Relocate Valve Box” could be a gas valve or a water valve. “Relocate Manhole” could be gas, water, underground power, etc. In these situations, clarify which utility is being impacted by showing the utility in parenthesis after the callout station.

CALLING OUT UTILITY WORK FOR PRIVATE VS PUBLIC UTILITIES

- ❑ **Private Utilities:** For private utilities (i.e. gas, power, telephone, cable), callout all above ground utilities that are in the way of construction. This includes, power poles, transformers, telephone pedestals, junction boxes, manholes, valve boxes, etc. However, private utility companies generally limit the amount of work that UDOT’s contractor can do (mainly adjusting manholes). If the work is to be done by UDOT’s contractor, use a standard callout with the work “req’d”. If the utility is in the way but will be relocated by the utility owner, modify the callout by stating that the relocation is to be done by others (i.e., Relocate Power Pole by Utah Power), omitting the word “req’d”, and placing the callouts in italics.

Do not call out relocations for underground private utilities. The responsibility of determining whether an underground utility requires relocation lies with the utility company. Coordinate design with the Region Utilities Coordinator.

- ❑ **Public Utilities:** For public utilities (i.e. water, sewer), provide callouts for all utility relocation work (above ground and underground). This will process requires coordination with the private utility owner. If the work is minor, the callouts can be included with the UR Sheets through coordination with the owner. Often, however, the work is too extensive and will require design by the utility owner (or the engineering firm they select). In this case, it is advisable to create a separate set of plans for that utility and include those plans with the project plan set, similar to a separate set of structures plans.

REFERENCE FILES

The following file(s) should be referenced into each UR Sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Design.dgn	Design	Partial
PIN_Extopo.dgn	Extopo	Yes
PIN_Exutil.dgn	Exutil	Yes
PIN_Exrow.dgn	Exrow	No

Turn on only those levels in the design file to display alignment, stationing, and cut/fill lines.

SHOW POTHOLE LOCATIONS AND REFER TO TABLE WHERE DATA IS SHOWN

**SHOW EXTOPO AND EXUTIL IN GREY SCALE.
DO NOT SHOW CONTOURS.**

**USE UDOT LINE STYLES AND
SHIFT LINES TO MAKE LETTERING VISIBLE.
AVOID OVERLAPPING WHERE POSSIBLE.**

STP-0068(24)43
BEG. PROJECT
STA. 118+80.42
N. 37.228.13
E. 49.932.06

RECONSTRUCT MANHOLE REQ'D

RELOCATE WATER METER REQ'D
EXISTING STA 121+15, 42 LT
RELOCATE TO STA 121+15.

RELOCATE FIRE HYDRANT REQ'D
EXISTING STA 120+51, 41 LT
RELOCATE TO STA 120+51.
EXISTING STA 121+11, 41 LT
RELOCATE TO STA 121+11.

RECONSTRUCT SEWER CLEANDUT REQ'D

STA 122+15. 50 LT (WATER)
STA 121+55. 50 LT (GAS)

STA 120+45. 48 LT
(TRANSFORMER)
STA 122+41. 45 LT
(UTILITY POLE)

RELOCATION BY QWEST
STA 120+41, 45 LT
(TELEPHONE PEDESTAL)
STA 121+52, 46 LT
(TELEPHONE PEDESTAL)

**CALLOUTS FORMAT FOR ITEMS TO BE RELOCATED:
SHOW THE EXISTING LOCATION FOLLOWED BY THE
NEW STATION AND OFFSET. NEW LOCATION CALLOUTS
NEED GREATER ACCURACY (100TH OF A FOOT) THAN
EXISTING.**

SHOW CUT AND FILL LINES FROM
REFERENCED DESIGN FILE.

REDWOOD ROAD (1700 WEST)

MATCH LINE STATION 123+00.00
SEE SHEET UR-02

***LABEL UTILITIES BY USING CORRECT UDOT
LINSTYLE AND SHOWING UTILITY SIZES
WHEN APPLICABLE (I.E. 6" HP, 6" PVC WATER)***

**LIST STATION AND OFFSET FOR EACH ITEM
CALL OUT TO THE NEAREST FOOT.**

**WHAT TYPE OF MANHOLE IS THIS?
CLAFIFY BY SHOWING THE UTILITY
TYPE IN PARENTHESIS.**

**DESCRIBE UTILITY TO BE RELOCATED
(I.E. POWER POLE, TELEPHONE PEDESTAL)**

IDENTIFY WORK TO BE DONE BY OTHERS:
 ABOVE GROUND PRIVATE UTILITIES WITHIN THE
 CONSTRUCTION LIMITS SHOULD BE CALLED OUT.
 HOWEVER, THE CALL OUT SHOULD NOT INCLUDE
 THE WORK REQ'D AND SHOULD STATE THAT THE
 WORK WILL BE DONE BY OTHERS. FOR EXAMPLE,
 "RELOCATION BY UP&L" OR "RELOCATION BY QUESTAR".
 UNDERGROUND PRIVATE UTILITY WORK IS NOT
 CALLED OUT. GROUP ALL WORK TO BE DONE
 BY OTHERS TOGETHER BY UTILITY COMPANY,
 AND USE ITALICS (35° SLANT) & WT = 1.

RELOCATION BY UPR

STA 119+66, 26 RT
(UTILITY POLE)

STA 119+75, 26 RT
(UTILITY POLE)

STA 122+17, 27 RT
(UTILITY POLE)

STA 122+41, 28 RT
(UTILITY POLE)

RECONSTRUCT MANHOLE REQ'D

CALLOUT ITEMS TO BE RELOCATED BY THE OTHERS TO THE EXISTING LOCATION.

UTILITY CONTACTS			
UTILITY COMPANY	CONTACT PERSON	INTEREST	PHONE
QWEST	JEFF STAPLEY	FIBER OPTIC	974-8525
AT&T	CHAD NOBLE	CABLE	971-3164
AT&T	STUART ZEEH	CABLE	401-3024
QUESTAR	CHAD LEWIS	GAS	324-3123
QUESTAR	MIKE JAYNES	GAS	324-3327
UTAH POWER & LIGHT	BRIAN THOMAS	ELECTRIC	220-4404
UDOT	CRAIG WRIGHT	ATMS	887-3764
UDOT	BILL BUTTERFIELD	TRAFFIC SIGNALS	887-3748
WEST JORDAN PUBLIC WORKS	DAVE MURPHY	WATER/SANITARY SEWER	569-5074
SOUTH JORDAN PUBLIC WORKS	CHRIS SMITH	WATER/STORM DRAIN	253-5230
SOUTH VALLEY SEWER DISTRICT	CRAIG WHITE	SANITARY SEWER	571-1166

LIST ON THE FIRST PAGE OF THE UR SHEETS ALL UTILITIES AND CONTACTS WITHIN THE PROJECT LIMITS. COORDINATE WITH THE REGION UTILITIES ENGINEER TO COMPLETE THIS LIST.

UTAH DEPARTMENT OF TRANSPORTATION

REDWOOD ROAD
11400 TO 10400 SOUTH

SALT LAKE
COUNTY

SHEET NO. UR-01

STRIPING SHEET REQUIREMENTS

DESCRIPTION

Striping Sheets (ST Sheets) show the proposed striping layout. Striping Sheets should be combined with Signing Sheets (SS Sheets) when possible for small projects.

ST SHEET CHECKLIST

- ❑ Show the new alignment, stationing, and curve data.
- ❑ Show the proposed design. However, do not display the cut & fill lines.
- ❑ Label lane widths, taper locations, taper widths, and line type. Label the beginning and ending of lines as space permits.

HOW TO CALLOUT ITEMS

- ❑ A station & offset callout should be provided at the beginning and ending of each item, at angle points, and as necessary at match lines.
- ❑ Callout items to the nearest 100th of a foot.
- ❑ Keep callouts separated by striping type. For example, keep all of the 4-inch skip lines together, rather than combining them with 4-inch solid line (even though technically, both are 4 inch paint/tape).
- ❑ Pavement messages: Center of pavement messages. Combine pavement message into a table for better organization.
- ❑ Stop Bars: Station and offset of the each end of the stop bar.
- ❑ Crosswalks: Station and offset of each end of the crosswalk. Use the crosswalk line closest to the stop bar.

Calling out station and offset of each end of the stop bars and cross walks helps to define the exact placement of the item and avoids having to callout confusing angles.

- ❑ Delineators & barrier reflectors: Callout delineators and barrier reflectors by showing them in plan view and providing a label for each typical application. Include instructions in the label about spacing requirements.

REFERENCE FILES

The following file(s) should be referenced into each ST sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Design.dgn	Design	Yes
PIN_Striping.dgn	Striping	Yes

Turn off the level in the design file showing cut/fill lines.

SIGNING SHEET REQUIREMENTS

DESCRIPTION

Signing Sheets (SS Sheets) show the proposed signing plan. Signing Sheets should be combined with Striping Sheets (ST Sheets) when possible for small projects

SS SHEET CHECKLIST

- ❑ Show the new alignment and stationing.
- ❑ Show a drawing of the proposed sign with a leader pointing to the final location.
- ❑ Place the sign cell in the signing.dgn file. Place callouts, labels, and sign schematic in the sheet file.
- ❑ Show a drawing of any existing signs that are to remain in place. For most projects (freeway projects in particular), showing existing signs that are to remain in place helps reviewers ensure proper signing sequence. Show existing signs in dashed lines to differentiate them from new signs and label them “Existing Sign to Remain in Place.”
- ❑ Show the proposed design and striping plan. However, do not display the cut & fill lines. Do not display existing topography, except for small projects and rehab jobs where it may be necessary.

HOW TO CALLOUT ITEMS

- ❑ Show the station, offset, MUTCD code, and pay item description.
- ❑ Callout signs to the nearest 100th of a foot.
- ❑ Sign location should be to the center of post for single post signs. For multiple post signs, the offset can be measured from either the center of the sign or the edge. However, a note should be provided on the sheet to clarify.

For large guide signs, it is often easier to call the offset out from the edge of the sign. This is because the location is usually determined by a minimum distance from the edge of the sign to the highway shoulder.

- ❑ Assign all signs a number for easy referencing.
- ❑ Sign Relocations: Provide station/offset to both the existing location and the proposed location. Show a schematic of the relocated sign in dashed lines.
- ❑ Sign Assemblies: Callout station and offset for the main sign on the assembly (generally the route marker). Additional signs on the assembly are called out as “auxiliary signs”.

CHECKLIST FOR GUIDE SIGNS

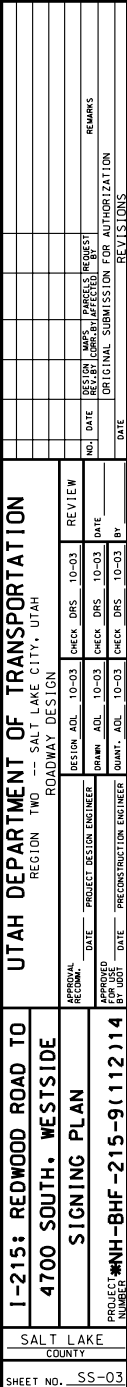
- ❑ Projects that include extensive guide signs need to be reviewed by the Traffic and Safety Division in the UDOT Complex. All projects on the Interstate Highway System must be reviewed by the Traffic and Safety Division.
- ❑ Provide a detail either on the sheet or in the Detail Sheets laying out guide sign dimensions, letter sizes, and alphabet. A cross section at the signs final location should be provided to help show approximate length of breakaway posts.
- ❑ Guide signs are generally paid by the square foot.
- ❑ Foundations: Most guide signs are anchored in the ground with concrete foundations. If concrete foundations are required, provide a pay item in the sign schedule and estimate for “sign foundation”.

REFERENCE FILES

The following file(s) should be referenced into each SS Sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Design.dgn	Design	Yes
PIN_Striping.dgn	Striping	Yes
PIN_Signing.dgn	Signing	Yes

Turn off the level in the design file showing cut/fill lines



GRADING SHEET REQUIREMENTS

DESCRIPTION

Grading Sheets (GR Sheets) are used to show how to construct pavement cross slopes in areas that require complicated warping that cannot be described on a superelevation diagram. If the cross slope can be described either on typical sections or with superelevation diagrams, grading sheets are not required. Grading sheets are often used for: intersections, freeway ramps (near the gore), and tie-ins with an existing cross slope that vary substantially from the new pavement cross slope.

GR SHEET CHECKLIST

- ❑ Reference the new design. Include cut & fill lines.
- ❑ Display the alignment and stationing **for the correct scale** used in the grading sheets. See the paragraph entitled “Grading Sheet Scale” in this section for further discussion.
- ❑ If showing multiple intersections on one grading sheet, **DO NOT** copy the design into the sheet file. Reference the design file into the sheet file and move the referenced design to the right location on the sheet. This insures that the grading sheets show the most current design.
- ❑ Vary cross slope linearly to tie into cross streets. Label the station where change in cross slope begins and ends as well as even intervals. For major cross streets, change in cross slope should conform to the maximum superelevation gradient defined in AASHTO, page 170 (see also AASHTO Exhibit 3-29).
- ❑ Coordinate grading sheets with storm drain design in insure that the proposed intersection can be drained.

GRADING SHEET SCALE

The scale used for grading sheets is often

different from the scale used for plan sheets. This creates the following problem. The alignment annotation in the design file (stationing, tick marks, bearings, names) will be too large for the grading sheets. In addition, because elevations are given every 25 feet, the major and minor tick interval needs to be modified.

The best way to address this problem is to re-annotate the alignment in the PIN_Grading file for the proper scale. This file can then be referenced into the sheet file, and the conflicting alignment levels in PIN_design can be turned off.

When annotating the alignment, use a standard preference file from the civil.ini file.

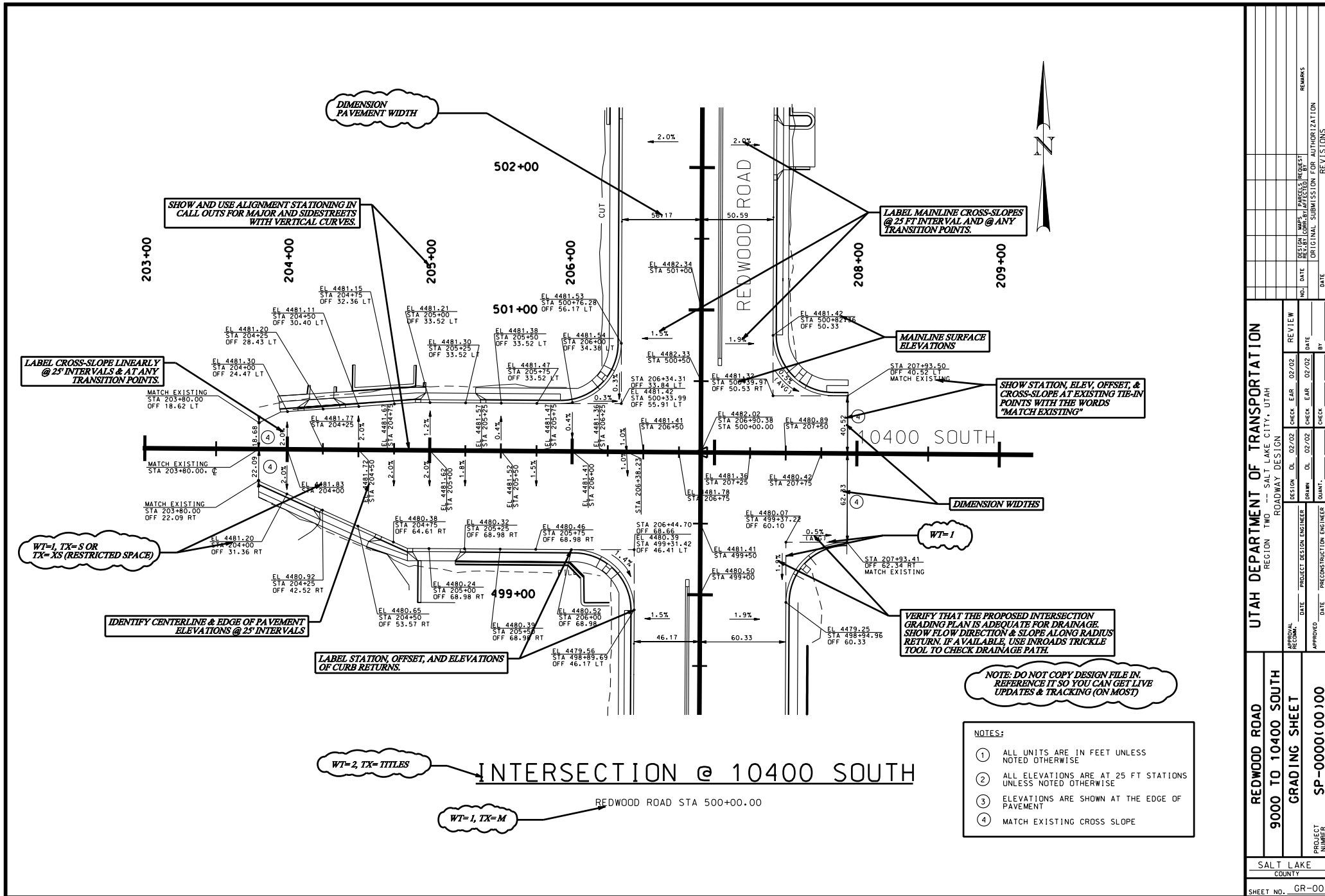
WHAT TO LABEL

- ❑ Show elevations/offsets at even 25 ft intervals (for all alignments with intersections).
- ❑ Show the station, elevation, offset, and slope at radius returns.
- ❑ Show station, elevation, offset, & cross slope at existing tie-in points with the words “match existing.”
- ❑ Elevations are to the edge of pavement.
- ❑ Show stations and elevations to the nearest 100th of a foot.
- ❑ Show the direction of flow along the radius return.

REFERENCE FILES

The following file(s) should be referenced into each GR Sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Design.dgn	Design	Yes
PIN_Grading.dgn	Grading	Yes



MOT SHEET REQUIREMENTS

DESCRIPTION

Maintenance of Traffic Sheets (MOT Sheets) show the contractor how to advise the public of changes to normal traffic flow, and indicate planned detours and alternate routes to impacted and/or closed roads.

If a road closure is being considered for the project, the plans should show how to detour traffic around **each** anticipated closure. If the road is not being closed, an alternate route plan is required **on every project** to advise motorists of impacts and allow them to avoid the project's limits if desired. In addition, the alternate route plan informs the motorist that business access is being maintained.

DOESN'T THE MUTCD ALREADY SHOW HOW TO DETOUR TRAFFIC?

Although the MUTCD provides clear guidelines about detour signage (including size, color, text, and even where to place the signs), it does not tell the contractor *how* to detour traffic. Without project specific guidance from the Department, the contractor could choose a detour route that is unacceptable.

Providing a detailed MOT plan shows the contractor an exact detour route that has been deemed acceptable by UDOT, including number, size, and location of signs. This insures that the contractor can bid appropriately for MOT and insures that the detour route is acceptable.

MOT SHEET CHECKLIST – GENERAL REQUIREMENTS

- ❑ Coordinate design of MOT detour plan with the Region Traffic Engineer (RTE).
- ❑ Provide a map showing placement of alternate route signs to route motorists around the project work zone in accordance with MUTCD standards. Signs should include alternate route blazings with designated sign color,

MUTCD code, size, and route shields.

- ❑ Project Specific Signs: Use an appropriate software program (i.e. *Guide Sign*) to correctly size and dimension all project specific, custom signs in accordance with MUTCD standards. Label sign size and letter size. Use a “C” size alphabet (or larger if required by *MUTCD*). Sign design should conform to *MUTCD* standards.
- ❑ Variable Message Signs (VMS): The MOT plans should include one VMS placed on major roadways (both directions) placed one week in advance of construction. The plans should specify the VMS placement location and should indicate the proposed sign message. The VMS message should include a start date of construction and should be a two phase message or less.
- ❑ Provide an information sign for the project duration on major roadways (both directions). This sign includes the problem (construction), the limits of the construction, and an appropriate action (alternate route and business access open).
- ❑ If the alternate route uses a non-state highway, coordinate the MOT plan with the appropriate local agency. Obtain a letter from that agency stating their agreement with the proposed MOT plan.
- ❑ If available, consider the use of permanent, overhead VMS and HAR radio sites in the MOT plan. For permanent VMS's, sign message can include advance notice of the project, detour instructions, warnings of work zone ahead, and delay messages. Coordinate the use and messages of these devices with the RTE.
- ❑ For large projects with significant traffic impacts, consult with the RTE and the Project Manager to consider the need for traffic modeling to study MOT impacts.

- ❑ Signal Timing Adjustments: Prior to advertising, meet with the Signal Systems Group (TOC) to allow them to prepare signal timing adjustment plans to fit the proposed MOT plans.

ADDITIONAL CHECKLIST FOR ROAD CLOSURES

- ❑ For road closures, develop a detour routing plan **for each** anticipated closure.
- ❑ Provide one VMS in each direction seven days in advance of the closure.
- ❑ Obtain approval for all closures through coordination with the Region Operations Engineer and the Region Director.

REFERENCE FILES

The following file(s) should be referenced into each MOT Sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Design.dgn	Design	Partial
PIN_MOT.dgn	MOT	Yes

Show only those levels in the design file (PIN_Design) to show the new improvements. Do not show alignment annotation (stationing, ticks, bearings, etc) and other information that will clutter the MOT sheets.

1 CONSTRUCTION
REDWOOD ROAD
10400 SO
TO 9000 SO
USE ALT ROUTE
BUSINESS
ACCESSES OPEN

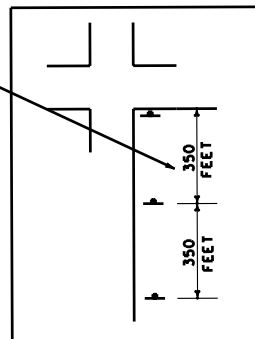
APPROX. 60in X 72in
6in SERIES C LETTERING

2 CONSTRUCTION
REDWOOD ROAD
9000 SO
TO 10400 SO
USE ALT ROUTE
BUSINESS
ACCESSES OPEN

APPROX. 60in X 72in
6in SERIES C LETTERING

PLACE ALL DETOUR SIGNING IN
ACCORDANCE WITH MUTCD
STANDARDS

PROVIDE ONE INFORMATION SIGN (EACH
DIRECTION) ON ALL MAJOR ROADWAYS
STATING CONSTRUCTION LIMITS AND
REQUIRED MOTORIST ACTION. SIGNS
SHOULD BE DIMENSIONED AND LETTER
SIZE INDICATED.



NOTES

1. THESE DETAILS ARE TO BE USED IN ADDITION TO MEETING THE REQUIREMENTS ESTABLISHED IN THE STANDARD DRAWINGS (INCLUDING TC 1A THROUGH TC 161), SPECIFICATIONS, SPECIAL PROVISIONS (INCLUDING 01554 AND 01556), THE MUTCD, AND ATSSA. ANY DISCREPANCIES OR CONFLICTS SHALL BE RESOLVED WITH THE UDOT REGION TRAFFIC ENGINEER.
2. ALL SIGN DIMENSIONS ARE SHOWN IN FEET (FT) UNLESS OTHERWISE NOTED.
3. SIGN LAYOUT NOT TO SCALE. TRAILBLAZING SIGN LOCATIONS MAY BE ADJUSTED IN THE FIELD AS NEEDED.
4. CLOSURE SIGNS APPEAR ON MOT PLANS FOR INFORMATION ONLY. THESE, OR SIMILAR, ARE TO BE INCLUDED AS PART OF THE CONTRACTOR'S TRAFFIC CONTROL PLAN.
5. ALL SIGNS SHOWN ARE BLACK LETTERING ON ORANGE BACKGROUND.

PROVIDE ONE VMS IN EACH DIRECTION.
SPECIFY THE GENERAL MESSAGE TO BE
USED. TWO PHASE MESSAGE OR LESS.

CONST.
BEGINS
-DATE-
USE
ALT

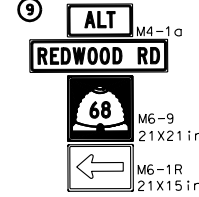
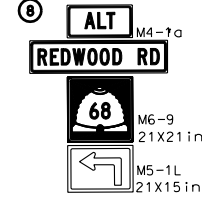
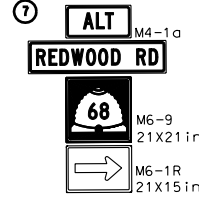
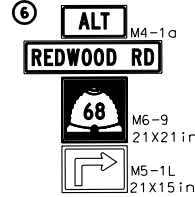
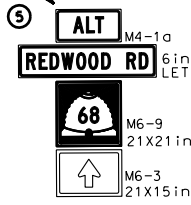
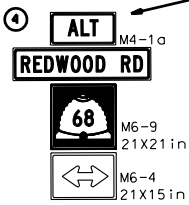
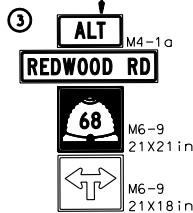
TEXT SIZE NEEDS TO BE SCALED TO
FIT THE SHEET SCALE

REFERENCE DESIGN FILE INTO
MOT SHEET.

2 PHASE VMS
LOCATED HERE
CONST.
BEGINS
-DATE-
USE
ALT

STANDARD TRAIL BLAZING SIGNS
PER MUTCD WITH SIGN SIZE
AND CODE LABELED.

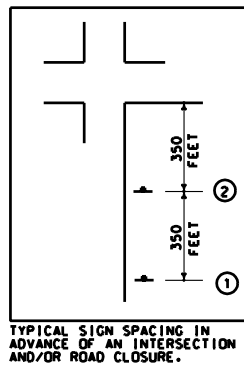
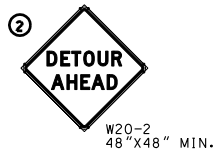
NOTE THE USE OF USE ALT ROUTE
SIGNS (M4-1a) FOR THIS TYPE OF
MOT PLAN.



MAINTENANCE OF TRAFFIC - EXAMPLE 1 (ALTERNATE ROUTE)

UTAH DEPARTMENT OF TRANSPORTATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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MAINTENANCE OF TRAFFIC EXAMPLE 2 (ROAD CLOSURE)



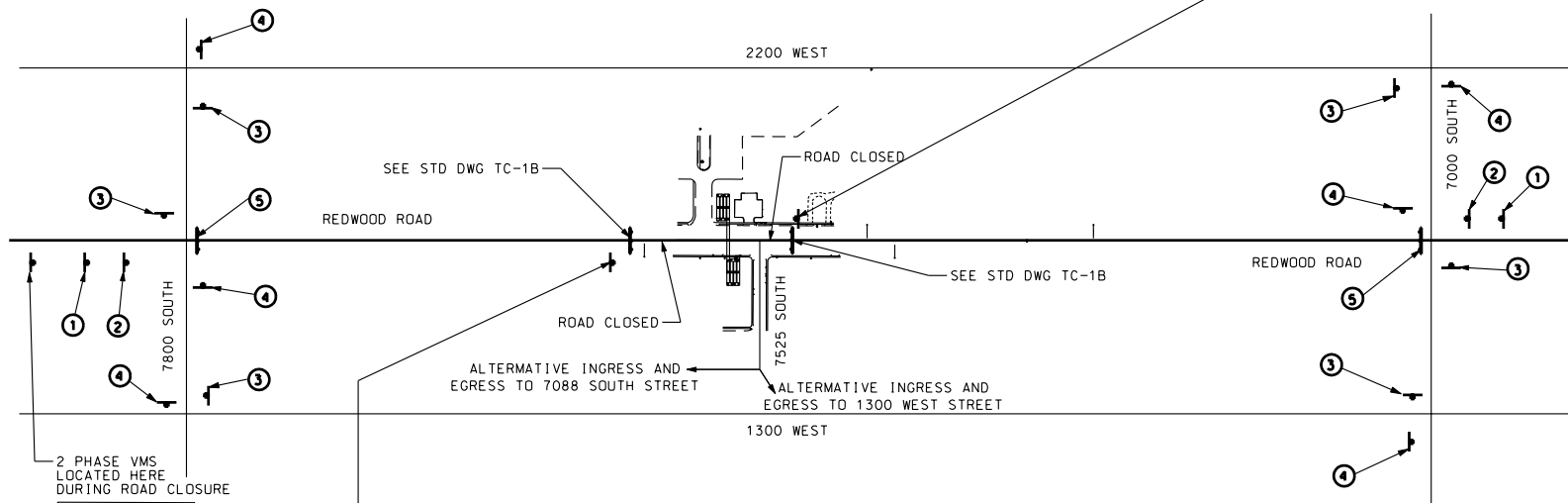
NOTES

1. THESE DETAILS ARE TO BE USED IN ADDITION TO MEETING THE REQUIREMENTS ESTABLISHED IN THE STANDARD DRAWINGS (INCLUDING TC 1A THROUGH TC 16), SPECIFICATIONS, SPECIAL PROVISIONS (INCLUDING 01554 AND 01556), THE MUTCD, AND ATSSA. ANY DISCREPANCIES OR CONFLICTS SHALL BE RESOLVED WITH THE UDOT REGION TRAFFIC ENGINEER.
2. ALL SIGN DIMENSIONS ARE SHOWN IN FEET (FT) UNLESS OTHERWISE NOTED.
3. SIGN LAYOUT NOT TO SCALE. TRAILBLAZING SIGN LOCATIONS MAY BE ADJUSTED IN THE FIELD AS NEEDED.
4. CLOSURE SIGNS APPEAR ON MOT PLANS FOR INFORMATION ONLY. THESE, OR SIMILAR, ARE TO BE INCLUDED AS PART OF THE CONTRACTOR'S TRAFFIC CONTROL PLAN.
5. ALL SIGNS SHOWN ARE BLACK LETTERING ON ORANGE BACKGROUND.

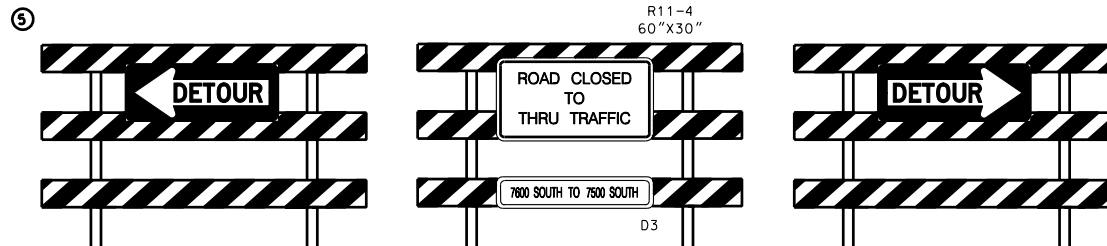
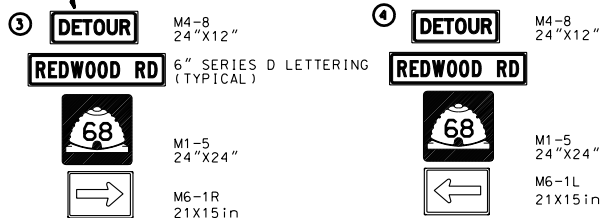
2 PHASE VMS
LOCATED HERE
DURING ROAD CLOSURE

REDWOOD CLOSED -DATE-
USE ALT

2 PHASE VMS
LOCATED HERE
PRIOR TO
ROAD CLOSURE



TRAIL BLAZING SIGNS USE
DETOUR SIGNS (M4-8).

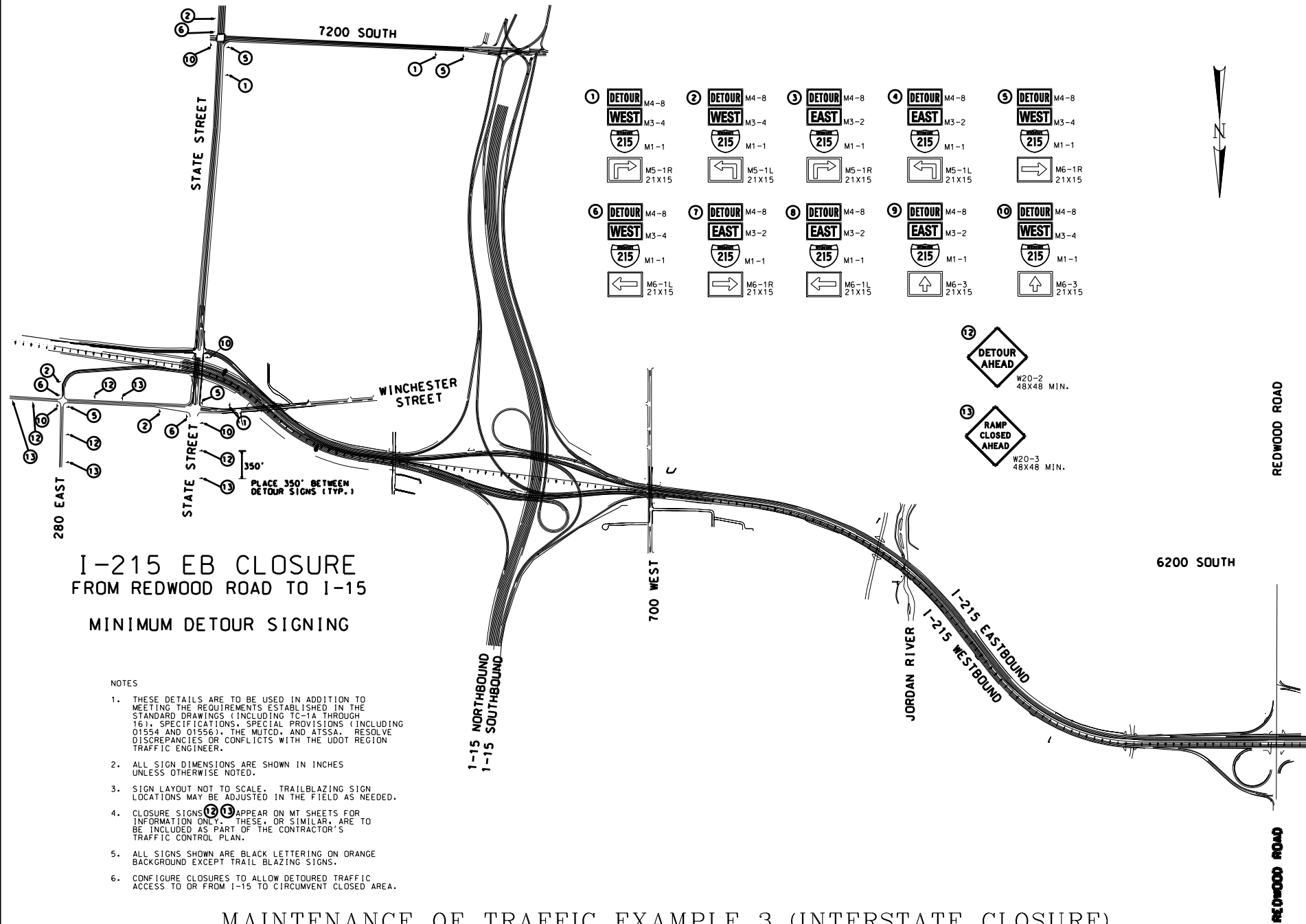


UTAH DEPARTMENT OF TRANSPORTATION
REGION TWO
ROADWAY DESIGN

PEDESTRIAN OVERPASS
REDWOOD ROAD
MAINTENANCE OF TRAFFIC

SALT LAKE
COUNTY

SHEET NO. MT-2



I-215 EB CLOSURE FROM REDWOOD ROAD TO I-15 MINIMUM DETOUR SIGNING

NOTES

1. THESE DETAILS ARE TO BE USED IN ADDITION TO MEETING THE REQUIREMENTS ESTABLISHED IN THE STANDARD DRAWINGS (INCLUDING TC-1A THROUGH 16), SPECIFICATIONS, SPECIAL PROVISIONS (INCLUDING 01554 AND 01556), THE MUTCD, AND ATSSA. RESOLVE DISCREPANCIES OR CONFLICTS WITH THE UDOT REGION TRAFFIC ENGINEER.
2. ALL SIGN DIMENSIONS ARE SHOWN IN INCHES UNLESS OTHERWISE NOTED.
3. SIGN LAYOUT NOT TO SCALE. TRAILBLAZING SIGN LOCATIONS MAY BE ADJUSTED IN THE FIELD AS NEEDED.
4. CLOSURE SIGNS (12)(13) APPEAR ON MT SHEETS FOR INFORMATION ONLY. THESE, OR SIMILAR, ARE TO BE INCLUDED AS PART OF THE CONTRACTOR'S TRAFFIC CONTROL PLAN.
5. ALL SIGNS SHOWN ARE BLACK LETTERING ON ORANGE BACKGROUND EXCEPT TRAIL BLAZING SIGNS.
6. CONFIGURE CLOSURES TO ALLOW DETOURED TRAFFIC ACCESS TO OR FROM I-15 TO CIRCUMVENT CLOSED AREA.

1	DETOUR WEST	M4-8 M3-4 M1-1	2	DETOUR WEST	M4-8 M3-4 M1-1	3	DETOUR EAST	M4-8 M3-2 M1-1	4	DETOUR EAST	M4-8 M3-2 M1-1	5	DETOUR WEST	M4-8 M3-4 M1-1
6	DETOUR WEST	M4-8 M3-4 M1-1	7	DETOUR EAST	M4-8 M3-2 M1-1	8	DETOUR EAST	M4-8 M3-2 M1-1	9	DETOUR EAST	M4-8 M3-2 M1-1	10	DETOUR WEST	M4-8 M3-4 M1-1
<p>Sign dimensions: M5-1R 21X15, M5-1L 21X15, M6-1L 21X15, M6-1R 21X15, M6-3 21X15</p>														

12 DETOUR AHEAD
W20-2 48X48 MIN.

13 RAMP CLOSED AHEAD
W20-3 48X48 MIN.

MAINTENANCE OF TRAFFIC EXAMPLE 3 (INTERSTATE CLOSURE)

UTAH DEPARTMENT OF TRANSPORTATION									
REGION TWO -- SALT LAKE CITY, UTAH									
ROADWAY DESIGN									
DESIGN	DATE	6/02	CHECK	DATE	6/02	REVIEW	DATE	6/02	BY
PROJECT DESIGN ENGINEER	DATE		PROJECT DESIGN ENGINEER	DATE		PROJECT DESIGN ENGINEER	DATE		
PRECONSTRUCTION ENGINEER	DATE		PRECONSTRUCTION ENGINEER	DATE		PRECONSTRUCTION ENGINEER	DATE		
APPROVED									
PROJECT #1M-NH-215-9(102)10									
SHEET NO. MT-3									

TRAFFIC CONTROL SHEET REQUIREMENTS

DESCRIPTION

Traffic Control Sheets (TC Sheets) provide *project specific* traffic control information to the contractor that is not provided in either the MUTCD or UDOT Standard Drawings. Project specific traffic control requirements can include phasing, lane configurations, temporary pavement requirements, or project specific signing to guide traffic through the work zone.

Project specific traffic control requirements should be determined through the public involvement process and in coordination with the Region Traffic Engineer and Project Manager.

Not all projects require TC sheets. For projects with fairly simple specific traffic control requirements, this information can be handled in the *Limitation of Operations* specification without the extra effort of generating traffic control sheets.

TCT SHEET CHECKLIST

- ☐ Coordinate traffic control requirements with the Region Traffic Engineer and follow *MUTCD*.
- ☐ Use *Guide Sign* software to create project specific, custom signs. Signs letter size and spacing should conform to *MUTCD* standards and should use a “C” size alphabet (or larger if required by *MUTCD*).
- ☐ Show phasing or minimum lane configurations with a typical section.
- ☐ If temporary pavement is required, show the minimum temporary pavement thickness in the typical sections.

Project specific traffic control requirements are best determined by meeting with the Project Manager and Region Traffic Engineer and discussing the needs of the project.

In addition, any maintenance of traffic requirements identified in the environmental document or in through the public involvement should be incorporated into the MOT plans.

REFERENCE FILES

The following file(s) should be referenced into each TC Sheet.

FILENAME	LOGICAL NAME	DISPLAY
PIN_Design.dgn	Design	Partial
PIN_TC.dgn	MOT	Yes